RADview/TDM

Element Management System for TDM Applications

LRS-24

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Chapter 1
Introduction

1.1 LRS-24 Overview

Management/CM-2 Functions

LRS-24 is managed by a UNIX-based or PC-based SNMP management system via the Central Management card (CM-2). The software is user-friendly, GUI-based and runs under PC/Windows (RADview-PC) or HP OpenView (RADview-HPOV) systems. Configuration and monitoring are also provided via Telnet or ASCII terminal.

Network management provides centralized control of all LRS-24 hubs, modem cards and remote modems in the network, including interface configuration, connection setup, alarm and monitoring. A single management station can control up to 64,000 LRS-24 hubs.

Direct 10BaseT Ethernet connection enables real-time management of central and remote sites. Performance information is available in graph and table format for the last 24 hours. This information can be saved in a file for accounting purposes.

If a major alarm occurs, the LRS-24 CM-2 card can dial out through an external dial-up modem to a central management site. This saves a direct connection to remote sites, while providing alerts if critical events occur. In addition alarms can activate dry contacts. The dry contacts are placed on the system clock connector on CM-2.

Two types of modem cards are available on the LRS-24:

- S-Mode: Cards with a built-in SNMP agent
- I-Mode: Cards without an SNMP agent. For these cards CM-2 serves as the SNMP proxy agent. The CM-2 built-in agent complies with SNMP MIB II and supports generic SNMP HPOV applications.

A new software version can be downloaded from a remote site onto the CM-2 via:

- LAN by TFTP
- Terminal by XMODEM.

CM-2 saves up to three software versions.

When the management station includes BootP software, the CM-2 card automatically retrieves the IP address required for management connection. This eliminates the need to configure IP addresses for new hub installations.

LRS-24 can also be managed from an ASCII terminal. It allows all functions of SNMP except for GUI interface. The connection is made via a V.24 supervisory port using SLIP or PPP.

Telnet support enables terminal connection over any IP network.

The CM-2 panel includes an alphanumeric display with two characters used for alerting on fault conditions and for the hub IP address.

Power Supplies

LRS-24 operates with single or dual, AC or DC power supplies. Each power supply supports a full LRS-24 hub, including modem cards. Redundant power supply can be replaced during operation, without affecting system performance (hot-swapping).

Cards in the LRS-24 chassis are capable of providing remote power feeding for repeaters and remote standalone modems. To provide remote power feeding order a separate standalone power supply, LRS-PS-FEED.

Product Options

Two different physical versions of the LRS-24 hub are available:

- **ANSI** – card insertion, LEDs and switches are at the front, but cable connections are at the rear of the hub. This compact, 4U high unit complies with the American ANSI standard. Cards can be hot-swapped without removing cables.
- **ETSI** – card insertion, LEDs, switches and cable connections are at the front. This version is 30 cm high (almost 6U), and complies with European ETSI standard. Cards can be hot-swapped without removing cables.

Application

Figure 1-1 shows an application of backbone data distribution up to customer's premises.

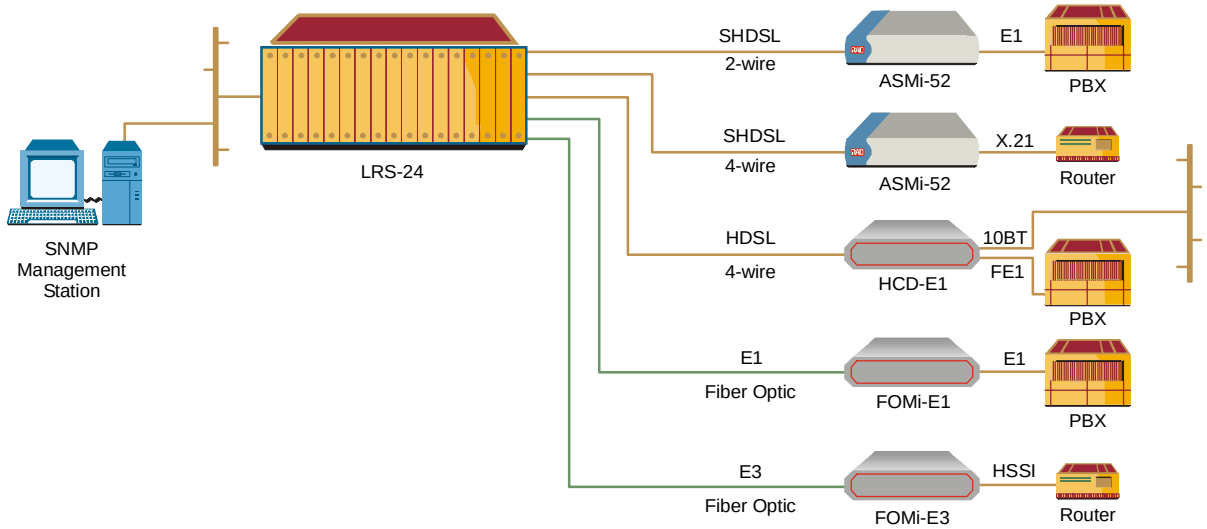


Figure 1-1. Backbone Data Distribution up to Customer's Premises

Figure 1-2 shows an application of management of local and remote distribution nodes.

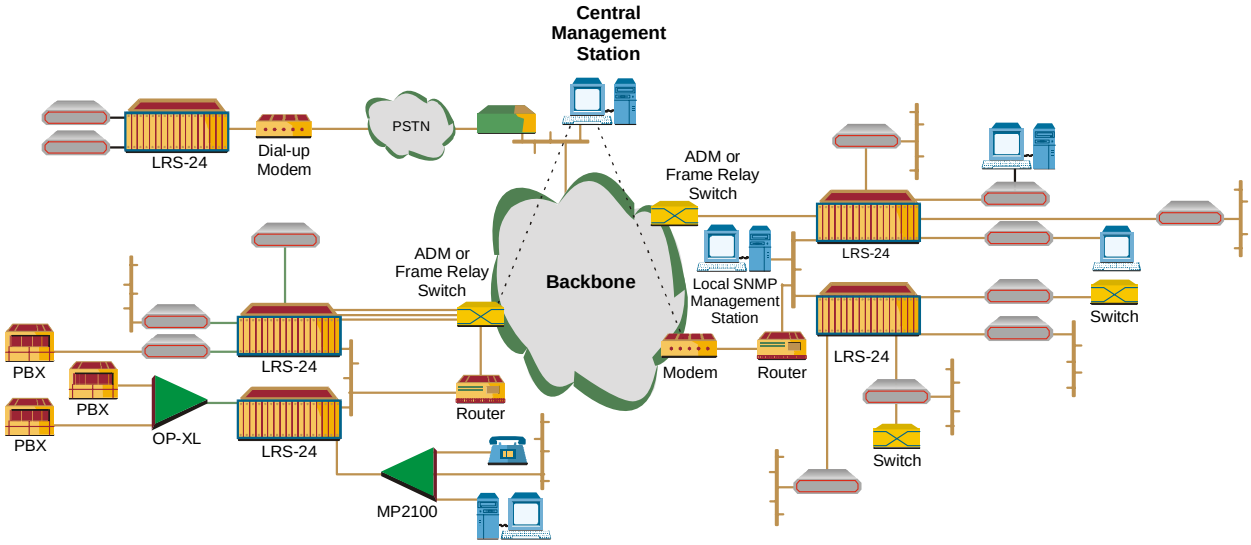


Figure 1-2. Management of Local and Remote Distribution Nodes

Features

LRS-24 is a high-density, fully modular design with front-panel access to all the functions. It supports up to 48 user modules in addition to redundant power supply and management access modules.

It combines different technologies in a centrally-managed rack: xDSL, fiber and baseband.

LRS-24 offers single-point management access to the individual equipment modules installed in the hub, and to the remote equipment units connected by links to these modules. LRS-24 supports SNMP management, as well as management by means of an ASCII terminal. No special software is required for the terminal, which is controlled by the management software of the modules installed in LRS-24.

Clock signals are distributed from an external source (station clock) to all the equipment modules installed in the hub.

Power supply voltages are regulated and power supply redundancy ensures continuous availability of power.

The unit supports remote (phantom) feed of equipment connected to LRS-24.

The mechanical design separates user hardware modules from interface (connector) modules, facilitates maintenance tasks.

The form factor is suitable for installation in standard 300 mm and 600 mm ETSI racks; can be easily adapted for installation in 19-inch racks.

The flexible modular construction and management capabilities that are available for the equipment installed in LRS-24 enable the user to easily configure individual systems for specific requirements and applications.

Remote Management

The modem cards in the LRS-24 can be remotely managed by the RADview-HPOV/TDM SNMP management system, the PC-based RADview-PC/TDM management system or by a dumb terminal. The same RADview application can manage the LRS-24, modems in the hub and other RAD products.

Audible and visual indicators provide status of alarms and tests at the network, card and port levels, and include all links connected to the hub. Alarms are automatically logged and presented upon request, unless otherwise masked.

Management by an ASCII Terminal

LRS-24 can also be managed from an ASCII terminal connected to the dedicated RS-232 port.

Clock

Control module CM-2 has a station clock connection enabling clock distribution to all cards, so that all cards can be synchronized to the same station clock. Refer to the specific card operation manual for a description of station clock support.

Power Supplies

LRS-24 operates with single or dual power supplies: AC or DC. Each power supply supports a full rack of cards of any combination. The redundant power supply can be replaced during operation, without affecting the system performance (hot- swapping).

The LRS-24 chassis contains fifteen slots:

- 2 PS (Power Supply) slots, located in slots 1-2
- 1 CL slot (containing the CM-2 card), located in slot 3
- 12 Modem card slots (containing SMOD and IMOD modem cards), located in slots numbered 10-1–10-12.

SMOD Cards

SMOD cards have their own agents. The card installed in the chassis is always an agent. The card's mode (Central = master, Remote =slave) is configured via a hardware jumper. The Central modem acts as the Proxy Agent for the concurrent Remote modem, (which may be another SMOD card or a standalone Remote modem). The IP address of the SMOD card is assigned by the LRS-24 Agent (CM-2).

The LRS-24 chassis supports the following SMOD cards:

- ASMi-450
- FOMi-E3
- FOMi-T3
- HCD-E1
- HTU-2
- HTU-E1 (NEW)

- HTU-T1
- OPTIMUX-4E1
- OPTIMUX-4T1.

Since SMOD cards have their own agents, they are not affected by any changes made to the LRS-24 agent. Changes can be made to the cards, and traps are generated to report these changes.

IMOD Cards

IMOD cards do not have their own agents. The CM-2 card serves as the agent for the LRS-24 and the IMOD cards. The procedures for viewing and configuring the modem parameters are similar for all IMOD cards.

The following IMOD cards are supported:

- ASM-40CD (LRS-24 only, version ≥ 2.5))
- ASMi-50C
- ASMi-50CD (LRS-24 only, version ≥ 2.5)
- ASMi-51CD (version ≥ 3.3)
- ASMi-51CQ (version ≥ 3.3)
- ASMi-51CQ-E1 (version ≥ 3.5)
- ASMi-52CD
- ASMi-52CD4W
- ASMi-52CD4W/New
- ASMi-52CD4W/NewEthernet
- ASMi-52CQ
- ASMi-52CQ/Ethernet
- FOMi-40C
- FOMi-40CD (LRS-24 only, version ≥ 2.5)
- FOMi-E1/T1C
- FOMi-E1/T1CD (LRS-24 only, version ≥ 2.5)
- MTMi-20C.

1.2 RADview-TDM Overview

RADview/TDM monitors and controls LRS-24 and enables you to do the following:

- At the System level:
  - Set system configuration
  - Edit the Manager List
  - Mask traps.

- At the Modem level:
  - Set configuration parameters
  - View alarms
  - Initiate tests
  - Monitor LRS-24 performance.

RADview-HPOV/TDM SNMP Management System

Both electrical and fiber optic modem cards can be managed by the RADview-HPOV/TDM SNMP management system. All cards in the hub, except for ASM-40CD, have remote control abilities for monitoring and/or controlling remote units, and several types of cards contain an internal SNMP agent. In some cases, managed cards can work opposite non-manageable modems.

RADview-HPOV management is available for modules with or without an integrated SNMP agent, via the SNMP Control Module (CM-2). The RADview-HPOV station is connected to LRS-24 via an integrated Ethernet connection on the CM-2 module; CM-2 acts as a proxy SNMP agent for those cards without an agent.

RADview-PC/TDM Management System

The RADview-PC/TDM management station communicates with LRS-24 using out-of-band communication via Ethernet.

The RADview-PC/TDM has a windows-based Graphical User Interface (GUI) platform for LANand WAN networks. The graphical user interface allows configuration with easy-to-use operations on graphical representations of the hub. The configuration can be performed at the port, card, hub and network levels.

Chapter 2
Installation and Operation

2.1 Pre-configuring for Network Management

Perform the preliminary hardware configuration of LRS-24 using a terminal emulation program.

Basic tasks include:

- Connecting the LRS-24 to a local terminal
- Viewing terminal commands
- Defining agent parameters.

➤ **To connect LRS-24 to a local terminal:**

- Connect the RS-232 connector to the CM-2 RS-232 port, located on the CM-2 card.

  The terminal emulation program uses the following communication parameters:

  - Baud rate: 38,400
  - Data bits: 8
  - Parity: None
  - Stop bits: 1
  - Flow control: None.

➤ **To define LRS-24 and SNMP agent parameters:**

1. From the Main menu, select System Configuration.

   The LRS Chassis Setup Screen appears (*Figure 2-1*).
2. Type in the name of the chassis, and press ‹**Enter**›.
3. To move to the next line, press ‹**Tab**›.
4. Repeat the above steps to define the remaining agent parameters. *Figure 2-1* shows a typical, completed data form.

Note

SNMP community names are case-sensitive.

```
LRS CHASSIS SETUP
CHASSIS NAME          :80
CHASSIS NUMBER        :3380
CHASSIS LOCATION IS   :*
CONTACT PERSON IS     :JohnDoe
CM CARD SOFTWARE VER :3.0  MAIN CARD HW REV  :VER 1.0
INTERFACE CARD HW REV     :0.0
TIME: (HH:MM:SS)      :17:43:06          DATE:(YYYY-MM-DD): 2003-01-03
IP ADDRESS            :172.017.152.080 IP MASK   :255.255.255.000
READ COMMUNITY        :PUBLIC
TRAP COMMUNITY        :PUBLIC
READ/WRITE COMMUNITY :PUBLIC
DEFAULT GATEWAY       :172.017.152.001
BURN IN MAC ADDRESS   :0020D2FD8D40      BOOTP ON/OFF       :OFF
BOOTP TIME OUT        :3 sec             BOOTP RETRIES      :30
CHASSIS IP MODE       :MULTIPLE
SERIAL LINE PROTOCOL :RS232
STATION CLOCK         :EXTERNAL-AMI CLOCK
```

Figure 2-1. LRS-24 Chassis Setup

Table 2-1. LRS Chassis Setup - System Configuration Command Fields

Parameter	Possible Values / Remarks
Chassis Name	Logical name assigned to the LRS-24 unit. Maximum 10 alphanumeric characters Default: LRS-24
Chassis Number	LRS-24 management number. The two least significant digits are displayed on the Stat/Add display located on the front panel of the CM-2 module. Maximum four hexadecimal digits Default: 5544
Chassis Location Is	Concise description of the chassis location Maximum 20 alphanumeric characters
Contact Person Is	Name of the person to be notified in case of problems / contact information. Maximum 20 alphanumeric characters
CM Card Software Version	Software version of CM-2 module.
Main Card HW Rev	Hardware version of CM-2 module.
Interface Card HW Rev	Hardware version of CM-2 interface module
Time	Time of internal CM-2 real-time clock (the time is correct for the instant the command has been received by the CM-2 module). To change the time, type the correct time according to the format: hh:mm:ss. Set the time at least one minute beyond the current time, so as to be able to press ‹Enter› at the correct instant after completing all the fields on the data form.

Parameter	Possible Values / Remarks
Date	Date on the internal CM-2 real-time clock. To change the date, type the correct date according to the format: YYY-MM-DD (year:month:day). When done, press ‹Enter› to move to the next field.
IP Address	IP address assigned to CM-2 module, in dotted-quad format. When assigning the IP address, remember that the following 12 IP addresses must be reserved for I/O modules (the first address is associated with I/O slot 1 and the last address with slot 12). Four groups of digits in the range of 0 through 255, separated by periods.
IP Mask	Subnet mask corresponding to the IP addresses used by the CM-2 module. Dotted-quad format
Read Community	Name of SNMP community that has read-only authorization (the CM-2 SNMP agent accept only getRequest and getNext Request command from management stations using that community). Up to seven alphanumeric characters
Read/Write Community	Name of SNMP commnity that has read-write authorization)the CM-2 SNMP agent accepts setRequest commands from management stations using that community). Up to seven alphanumeric characters
Trap Community	Name of SNMP community to which the CM2 SNMP agent send traps. Up to seven alphanumeric characters
Default Gateway	IP Address of default gateway to be used by CM-2 module to contact a management station located ona diffeent IP network. If the CM-2 module and the management staton are located on the Ip same network, enter 0.0.0.0. Dotted-quad format
Burn in MAC Address	Factory MAC address used by BOOTP server to declare the IP address of the CM-2.
BOOTP ON/OFF	Toggle to select BOOTP. To maintain backwards compatibility (with any LRS-12 version) set BOOTP ON/OFF to OFF. Otherwise, BOOTP ON/OFF should be set to ON. In either case, BOOTP ON/OFF should be set to OFF while setting the IP address. ON-use BOOTP OFF- no BOOTP Default value: OFF
BOOTP Time Out	Maximum waiting time for a BOOTP response. 1, 2, 3, *4*, 6, 8, 10, 15, 20 seconds Default value: 10 seconds
BOOTP Retries	Number of time to rety sending a request for the BOOTP server. 3, *4*, 5, 10, 15, 20, 25, 30 times Default value: 30 times

Parameter	Possible Values / Remarks
Chassis IP Mode	Single: Only one IP address. (The LRS-24 address is the CM-2 address.) CM-2 receives SMOD message and transfers to it to the SMOD modem after adjusting the IP. The IP is resolved from the community field. In this mode, ping and Telnet cannot be used directly on an SMOD; only the CM-2 IP address is relevant. Multiple: Normal mode. Every SMOD has its own IP address and the CM-2 does not interfere at the IP level. Every SMOD IP is calculated by adding the CM-2 IP address and the SMOD slot number.
Serial Line Protocol	SLIP. RS-232 terminal
Station Clock	Set station clock type. Internal External-Square External-AMI
Terminal Rate	Sets terminal rate. 9600 or 38400 bps Default value: 38400 bps
TFTP Retry Timeout (sec)	General retransmission time-out value. Default value: 15 seconds

2.2 Connecting to the Management Station

To connect the RADview/TDM management station to LRS-24 units, use either of the following setups:

- Direct management connection to LRS-24 link running on Ethernet
- Connection from management station in a LAN through an MBE to the local standalone modem.

Direct Management Connection

In this application, the management station is connected directly to an HTU-2, HCD-E1 or HTU-E1 unit. If more than one device is installed on this network, the device directly connected to management is the *local* unit. Any other devices are *remote*.

This application requires installation of SLIP. It is the customer's responsibility to acquire a SLIP communication program and to install it according to the manufacturer's instructions. RADview/TDM supports both public domain SLIP and vendor SLIP.

Figure 2-2 shows a sample direct management application.

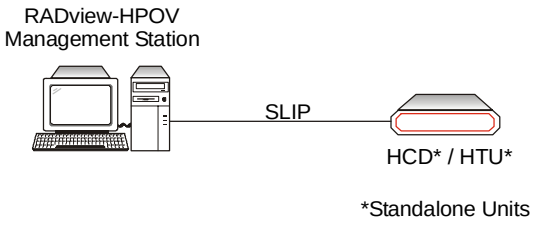


Figure 2-2. Direct Management Application

Management via LAN

In this application, the management station is connected to the managed devices through an Ethernet LAN and an MBE (Ethernet Elementary Bridge). If the MBE and the devices are located in the same subnet, the system will operate immediately upon hardware connection with no need for further software configuration.

Figure 2-3 diagrams a sample application of management via LAN.

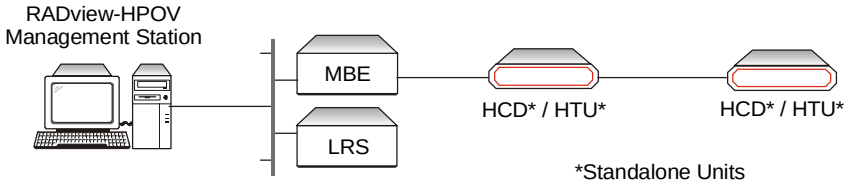


Figure 2-3. Management via LAN

2.3 Launching RADview/TDM LRS-24

Start using RADview/TDM LRS-24 by launching the (main) LRS-24 View window.

➤ **To open the LRS-24 View window:**

- On the map, double-click on the LRS-24 icon.

  The LRS-24 View window opens (see *Figure 2-4).* You are now able to perform configuration and monitoring functions in the entire LRS-24 system.

2.4 Using the Graphical User Interface (GUI)

From the LRS-24 View window, you can configure and monitor the entire system (LRS-24 chassis components).

LRS-24 View Window

The LRS-24 View window (*Figure 2-4*) provides a dynamically updated graphic representation of the modem cards in the LRS-24 chassis. The view includes the LEDs, interfaces and their operational and communication status.

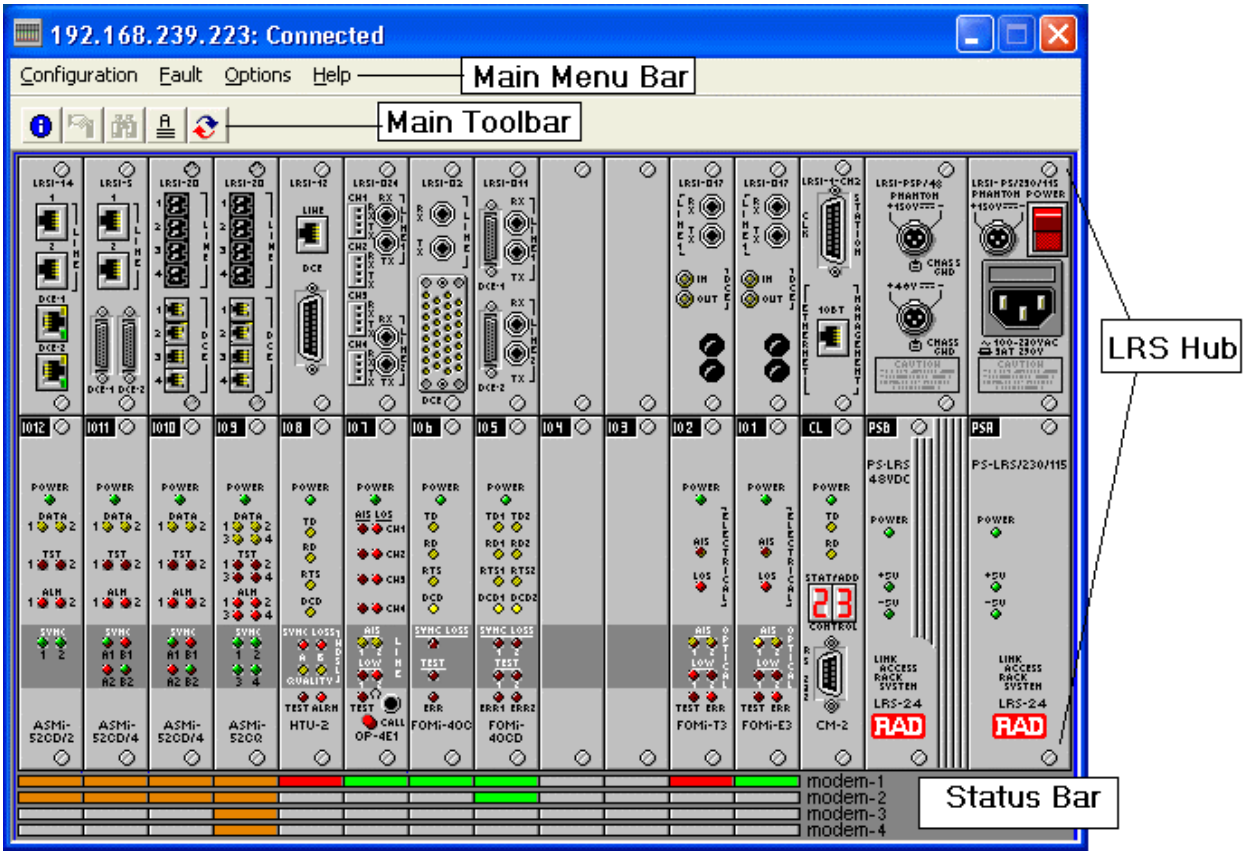


Figure 2-4. LRS-24 View Window

The LRS-24 View window (*Figure 2-4*) consists of the following parts:

- Main Menu Bar
- Main Toolbar
- LRS-24 Chassis (workspace)
- Status Bar.

Menu Bar

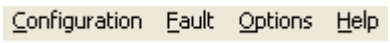


Figure 2-5. LRS-24 View Window Menu Bar

The main menu bar, located at the top of the LRS-24 View window, provides pull-down menus. Click on a menu to display all the items in that menu. Some of the menu items are general and some allow you to perform operations related to selected elements in the LRS-24 chassis image (workspace). Menus are enabled or disabled in accordance with the selected element.

Operations relating to a selected element can also be performed using pop-up menus invoked by right clicking with the mouse over the element.

Toolbar

Figure 2-6. LRS-24 View Window Toolbar

The main toolbar (*Figure 2-6*), located just below the main menu bar, allows you to perform various operations related to the selected element in the LRS-24 chassis (workspace). *Table 2-2* contains descriptions of each button.

Table 2-2. LRS-24 View Toolbar Buttons

Click This Button	To
	Display Modem Information
	Poll the device
	Zoom in on the device
	Display alarms
	Reset the device

LRS-24 Chassis (Workspace)

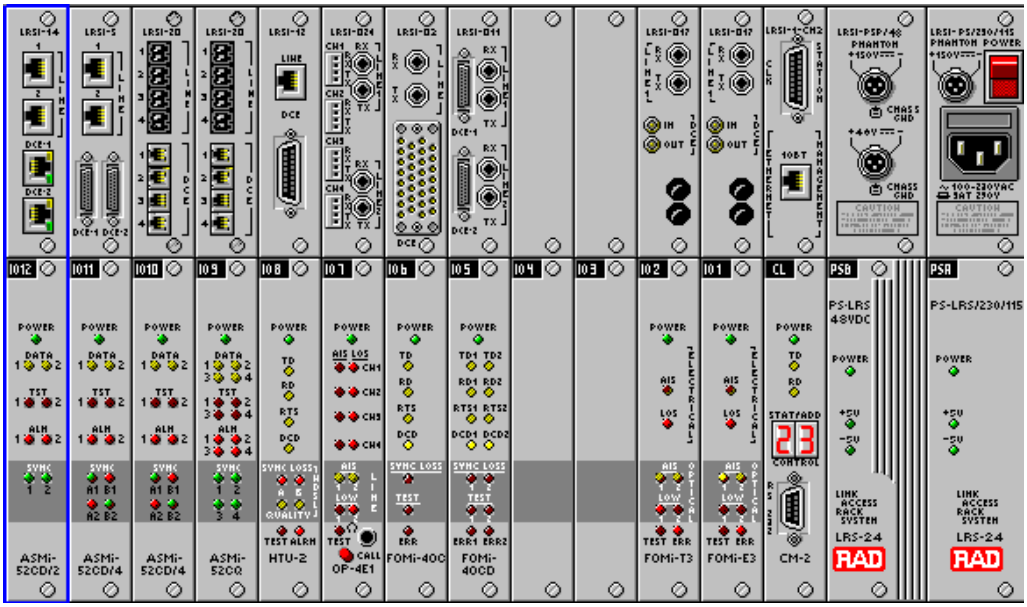


Figure 2-7. LRS-24 Chassis

The LRS-24 chassis (the graphical shelf view) is the central workspace in the LRS-24 View window. Here you can select cards, to invoke menu commands or right mouse clicks to perform activities such as zoom, configure, etc. The resulting equipment (card, modem) zoom view or dialog window opens (in a secondary window) on top of the LRS-24 View window.

Status Bar

Figure 2-8. Status Bar

The Status bar (*Figure 2-8)* appears under the LRS-24 chassis. Each segment of the Status bar corresponds to the IO slot directly above it on the chassis. The colors of the communication bar segments reflect connectivity between near-end and far-end modems (including SMOD modems), as follows (except for ASMi-40):

Red	No communication between near-end and far-end modem
Green	Communication between near-end and far-end modems is functional
Gray	The slot is empty or masked via installation update
Orange	Communication between near-end and far-end modems exists, but there is an active alarm relevant to the connection.

For ASM-40CD, the communication-bar segment color indications are as follows:

Green	Communication between near-end and far-end modems is functional or When test ANA+BERT is performed, the remote modem is disconnected.
Orange	No communication between near-end and far-end modem.
Gray	The slot is empty or masked via installation update

In LRS-12, single-slot cards are represented by a single row of indicators. In LRS-24, the upper row of indicators represents single-slot cards.

CD Card

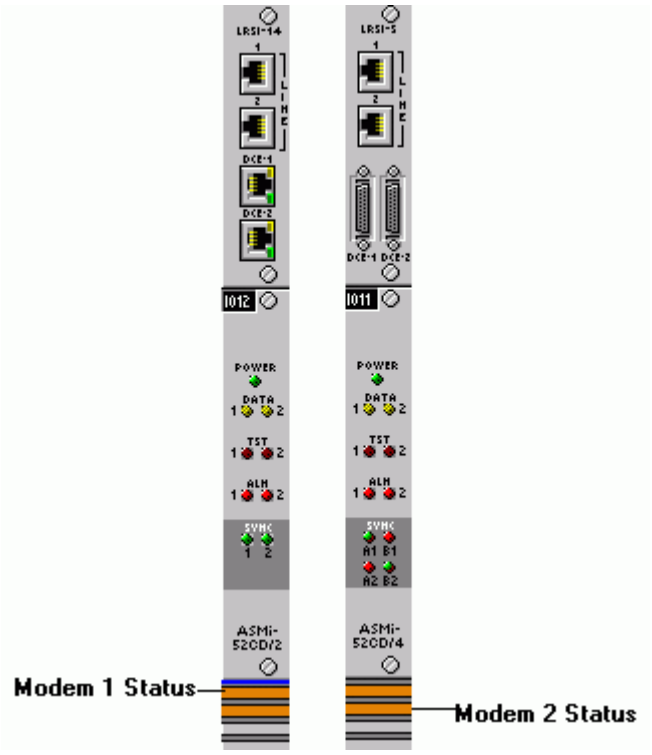


Figure 2-9. CD (2 and 4-wire) Card Front Panel

CD card status indicators (*Figure 2-9*) appear as follows:

- Modem-1 – upper row
- Modem-2 – lower row.

CQ Card

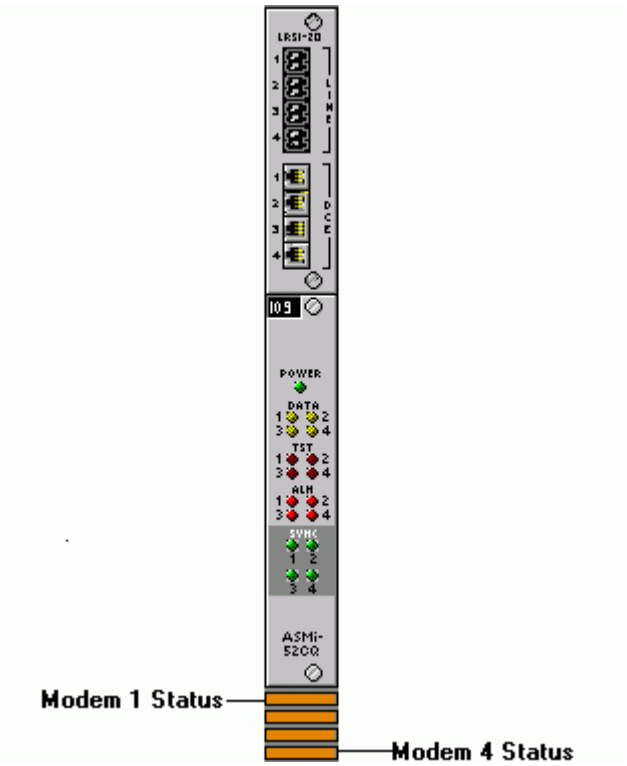


Figure 2-10. CQ Card Front Panel

CQ card status indicators (*Figure 2-10)* appear as follows:

- Modem-1 – upper row
- Modem-4 – lower row.

Chapter 3

Configuration Management

This chapter discusses how to configure the LRS-24 system using RADview/TDM.

- Setting system parameters
- Setting operational parameters
  - Managing cards
  - Managing modems

3.1 Setting the System Parameters

Selecting the System

Before you can perform system operations, you must first select the system in the LRS-24 View window.

➤ To select the system:

- Click inside the LRS-24 View window, without selecting a device. Ensure that no border surrounds any of the modem cards in the window.

  A blue border outlines the LRS-24 hub, indicating it is selected.

Viewing and Modifying System Configuration

RADview/TDM allows you to view and modify the configuration of the LRS-24 hub.

➤ To view/modify the LRS-24 system configuration:

1. In the LRS-24 View window, select the system (as described in *Setting the System* Parameters
2. Selecting the System), right-click and select:
   Configuration > System Information.

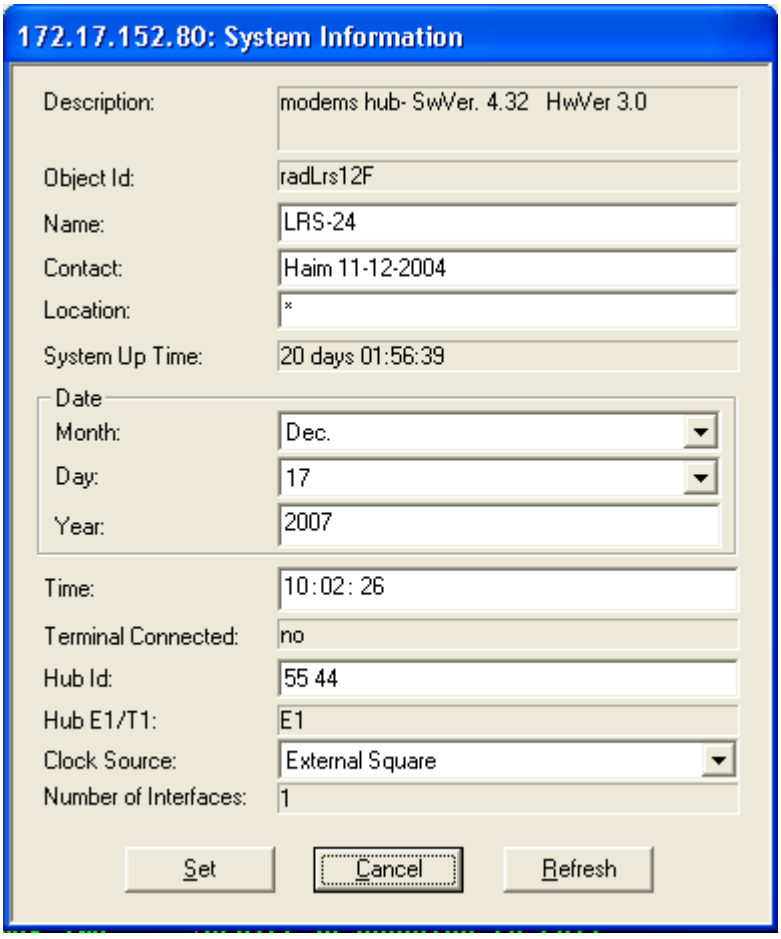


Figure 3-1. System Information Dialog Box

3. Fill in the fields, as described in *Table 3-1*.
4. Click ‹**Set**› to implement the changes.

Table 3-1. System Information Parameters

Parameter	Possible Values / Remarks
Description	Description of system Read-only
Object Id	System identification number Read-only
Name	Name of system user (12 characters)
Contact	Contact regarding system (27 characters)
Location	Location of system (27 characters)
System Up Time	Length of time the system has been running (**days**, **hours**, **minutes** and **seconds**) Read-only
Date	Current date (**month**, **day,** and **year**)
Time	Current time (**hours**, **minutes,** and **seconds**) Correct time must be entered, otherwise the system information cannot be set.
Terminal Connected	Indicates whether the terminal is connected or not Read-only
Hub ID	4 hex characters identifying the hub
Hub E1/T1	The E1/T1 value determines the hub clock rate Read-only
Clock Source	The timing source. **External AMI, External Square, Internal**
Number of Interfaces	The number of interfaces Read-only

Updating System Installation Registry

You can specify the connectivity of far-end modems to prevent generating alarm messages from disconnected modems.

Note

This is not relevant for SMOD modems.

➤ **To update system installation registry:**

1. Select the system by clicking inside the LRS-24 View window, without selecting a device. Ensure that no border surrounds any of the modem cards.
2. Right click and select **Configuration** › **Installation Update**.

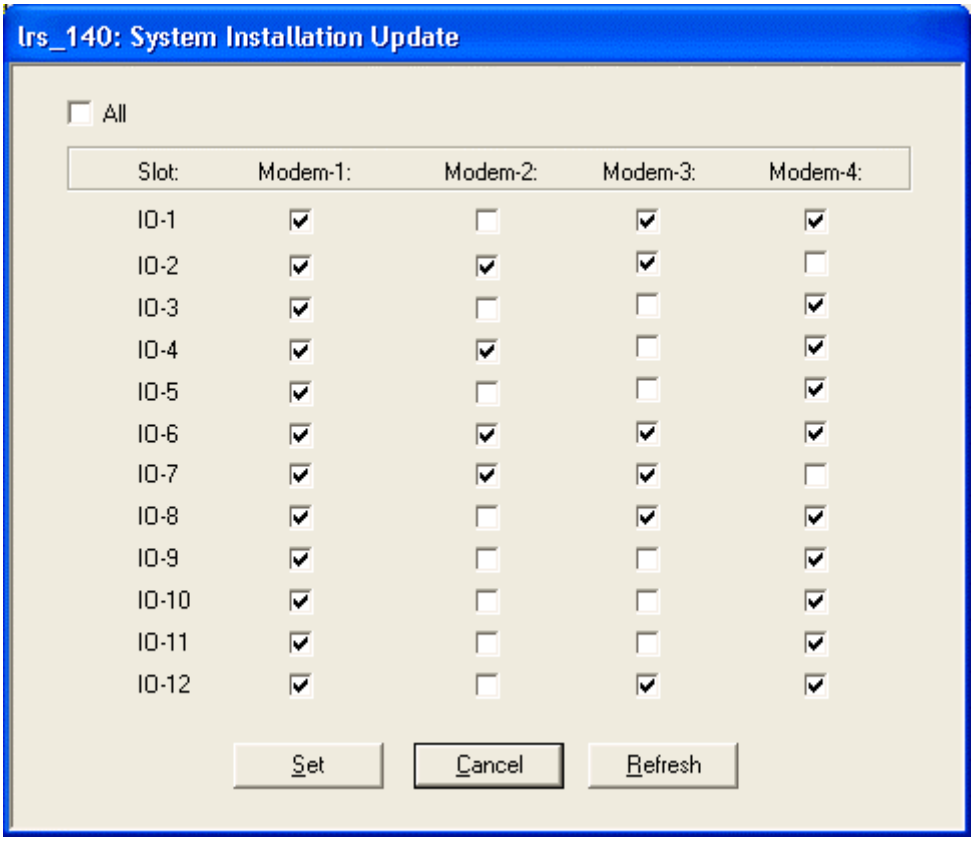


Figure 3-2. System Installation Update Dialog Box

3. Clear the check boxes of all modem I/O slots that are not currently connected. (Cleared check boxes mean that remote traps will be masked, and that RADview will ignore the alarms of those specific modems (status bar will turn gray).
4. Click ‹**Set**› to implement the changes.

Note

SMOD cards are independent and are not affected by masking specifications. Therefore, if you set RADview/TDM LRS-24 to mask traps for SMODs, traps continue to be sent.

Viewing the System Inventory

RADview/TDM allows you to view the system inventory, location, and version of each card in the LRS-24 hub.

➤ **To view the LRS-24 System Inventory:**

1. In the LRS-24 View window, select the system (as described in *Setting the System* Parameters
2. Selecting the System), right-click and select **Configuration** › **System Inventory**.

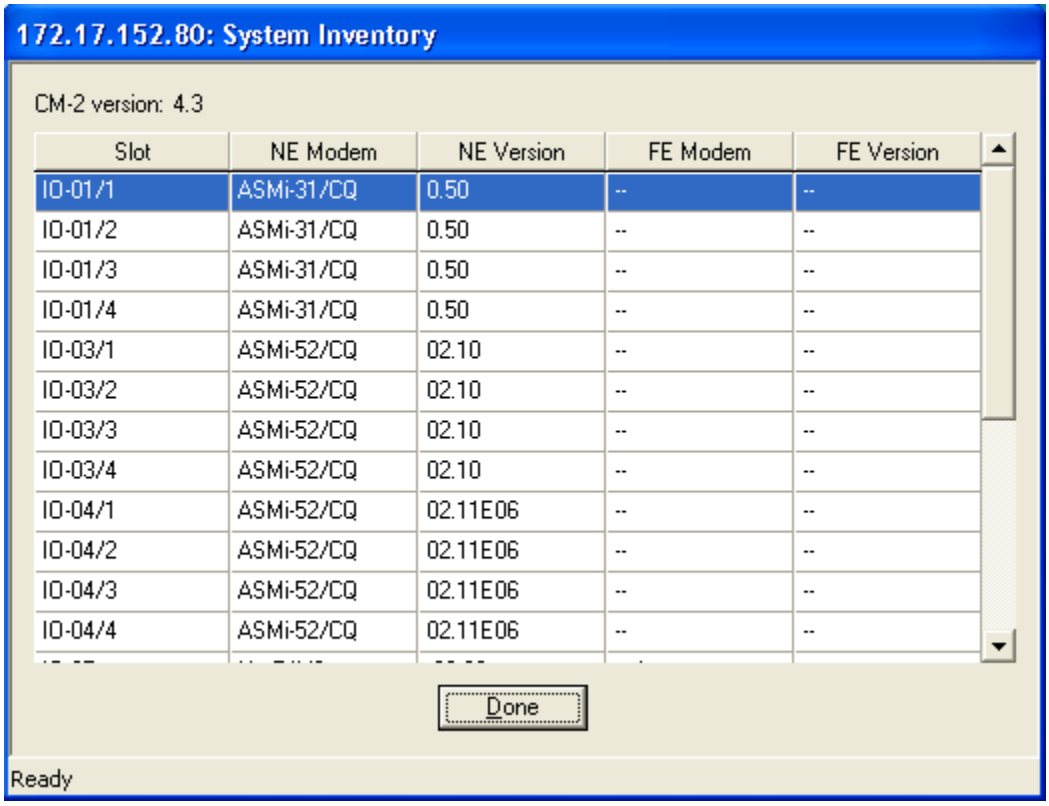


Figure 3-3. System Inventory Dialog Box

3. Click **Done** to close the dialog box.

Note *"Done" and "Close" buttons have the same meaning and are used interchangeably.*

Setting the LRS-24 System Controller

RADview/TDM allows you specify system control settings of the LRS-24.

➤ **To configure the LRS-24 System Controller:**

1. In the LRS-24 View window, select the system (as described in *Setting the System* Parameters
2. Selecting the System), right-click and select **Configuration** › **System Controller**.

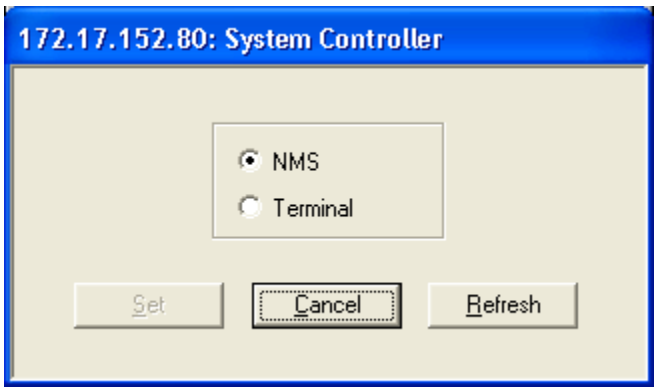


Figure 3-4. System Controller Dialog Box

3. To select the controlling system, click the relevant radio button (**NMS** or **Terminal**).
4. Click ‹**Set**›.

   The following message appears:
   `Changing Hub Controller. All Dboxes will close.`
5. Click ‹**OK**› to implement the changes.

   or

   Click ‹**Cancel**› to close the window.

   When the controlling system is set to Terminal, the following icon appears in the lower right corner of the LRS Main Window:

   When the controlling system is set to NMS, the following icon appears in the lower right corner of the LRS Main Window:

Setting the Manager List

RADview/TDM allows you to view and modify SNMP settings, to specify management stations that can receive LRS-24 traps.

In the LRS-24 Manager List, you can enter up to ten IP addresses of the relevant management stations.

➤ **To view/specify management station IP addresses to which to send traps:**

1. In the LRS-24 View window, select the system (as described in *Setting the System* Parameters
2. Selecting the System), right-click and select **Options** › **Manager List**.

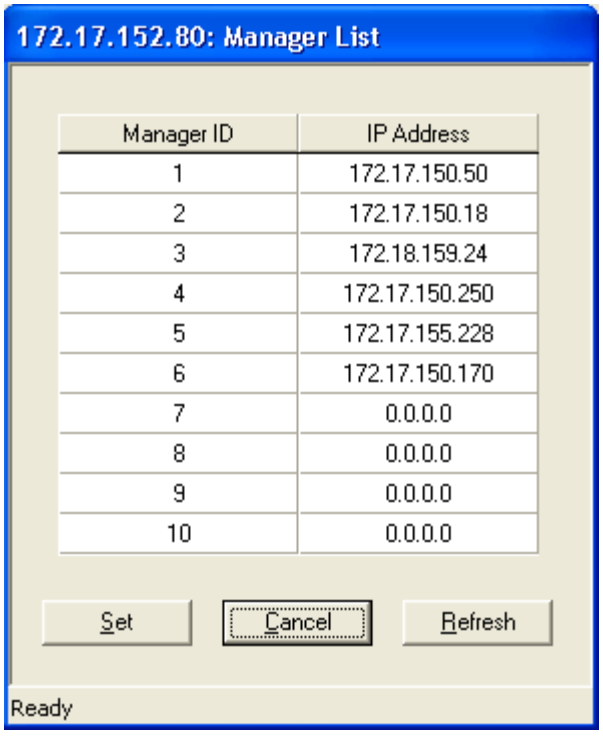


Figure 3-5. Manager List Dialog Box

3. In the IP Address field, enter a new IP address for the relevant Manager ID (management station), as described in *Table 3-2*.
4. Click ‹**Set**› to implement the changes.

Table 3-2. Manager List Parameters

Parameter	Possible Values/Remarks
Manager ID	Index number of the management station in the list. Read-only.
IP Address	Index number of the management station in the list.

Setting the IP Mode in SMOD Units

RADview offers two modes of IP address assignment for SMOD units:

- Multi IP, in which each unit is assigned a designated address
- Single IP, in which SMODs utilize the Common Logic (CL-2) address of the LRS-24.

Using the Single IP Mode saves up to 12 IP addresses per rack.

➤ **To select single/multiple IP Mode:**

1. In the LRS-24 View window, select the system (as described in *Setting the System* Parameters
2. Selecting the System), right-click and select **Options** › **IP Mode**.

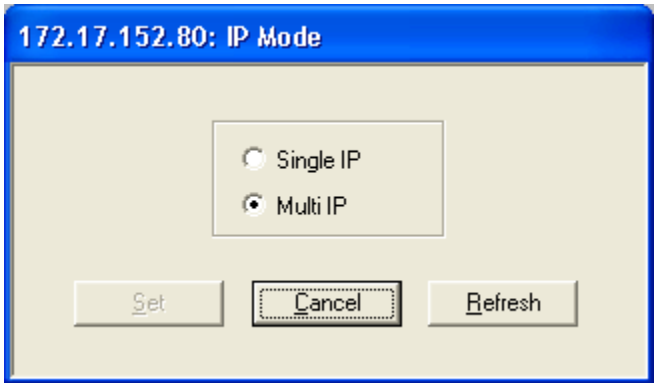


Figure 3-6. IP Mode Dialog Box

3. Select **Single IP** or **Multi IP** and click ‹**Set**›.

Resetting the System

Resetting the system reactivates the initialization processes with the updated configurations.

➤ **To reset the system:**

1. In the LRS-24 View window, select the system (as described in *Setting the System* Parameters
2. Selecting the System), right-click and select **Configuration** › **Reset**.

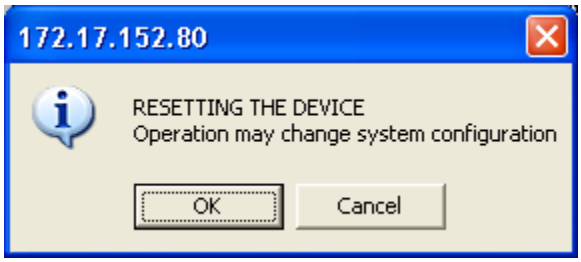


Figure 3-7. Reset Device Confirmation Message Dialog Box

3. Press ‹**OK**› to reset.

3.2 Setting Operational Parameters

Managing Cards

Before you can perform card operations, you must first select a card in the LRS-24 View window.

➤ **To select a card in the hub:**

- In the LRS-24 View window, click on a card.

  A blue border outlines the selected card.

In the LRS-24 View window, you can view and modify cards.

The availability and procedures for operations performed directly from the LRS-24 View vary slightly per card type. These variations are described in the relevant sections.

Viewing IMOD and CM-2 Card Information

In the LRS-24 View window, you can view card information for PS and CM-2 cards.

Note

For SMOD modem cards, you can view card information only in the Zoom view (see Zooming in on Cards, below, and IMOD and SMOD Cards in Chapter 1).

➤ **To view IMOD or CM-2 card information:**

1. In the LRS-24 view window, select the IMOD or the CM-2 card.

   A blue border outlines the selected card.

2. Right click and select **Configuration** › **Card Info.**

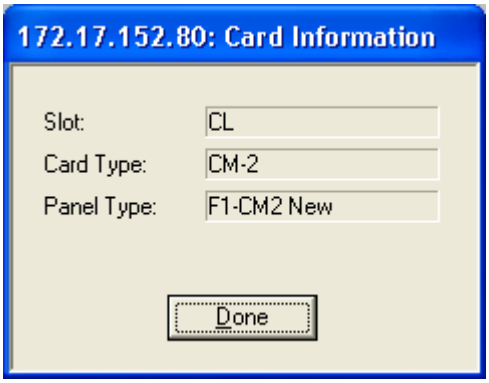


Figure 3-8. Card Information Dialog Box

3. View the fields, as described in *Table 3-3*.

Table 3-3. Card Information Parameters (PS or CM-2 Card)

Parameter	Possible Values / Remarks
Slot	A unique identification of the card slot position in the LRS-24 hub **PS-A, PS-B, CL** Read-only
Card Type	**PS 48V, PS115V/230V, CM-2** Read-only
Panel Type	The panel type of the LRS-24 card connector **PS 230V and 115V, PSP 230V and 115V, PS 48V, PSP 48V, F1-CM2, F1-CM2 NEW, F2-CM2, F3-CM2, F2, F3, F5 ..F7, F9.. F14 , F18, F19, F20, F21, F22, F23, FO1..FO20** Read-only

Zooming in on Cards

You can zoom in on selected cards to open the Zoom view of both the card and its related modem(s). Zoom Card is the only card operation available to IMOD and SMOD modem cards directly from the LRS-24 View window. All other modem-card

operations are performed from the Zoom view. (For further details regarding this, see *IMOD and SMOD Cards* in *Chapter 1*.)

➤ **To zoom in on any card in the LRS-24 hub:**

4. In the LRS-24 View window, double-click on the desired card.

   or

   Select the card (as described in *Managing Cards*), right click and select **Zoom Card**.

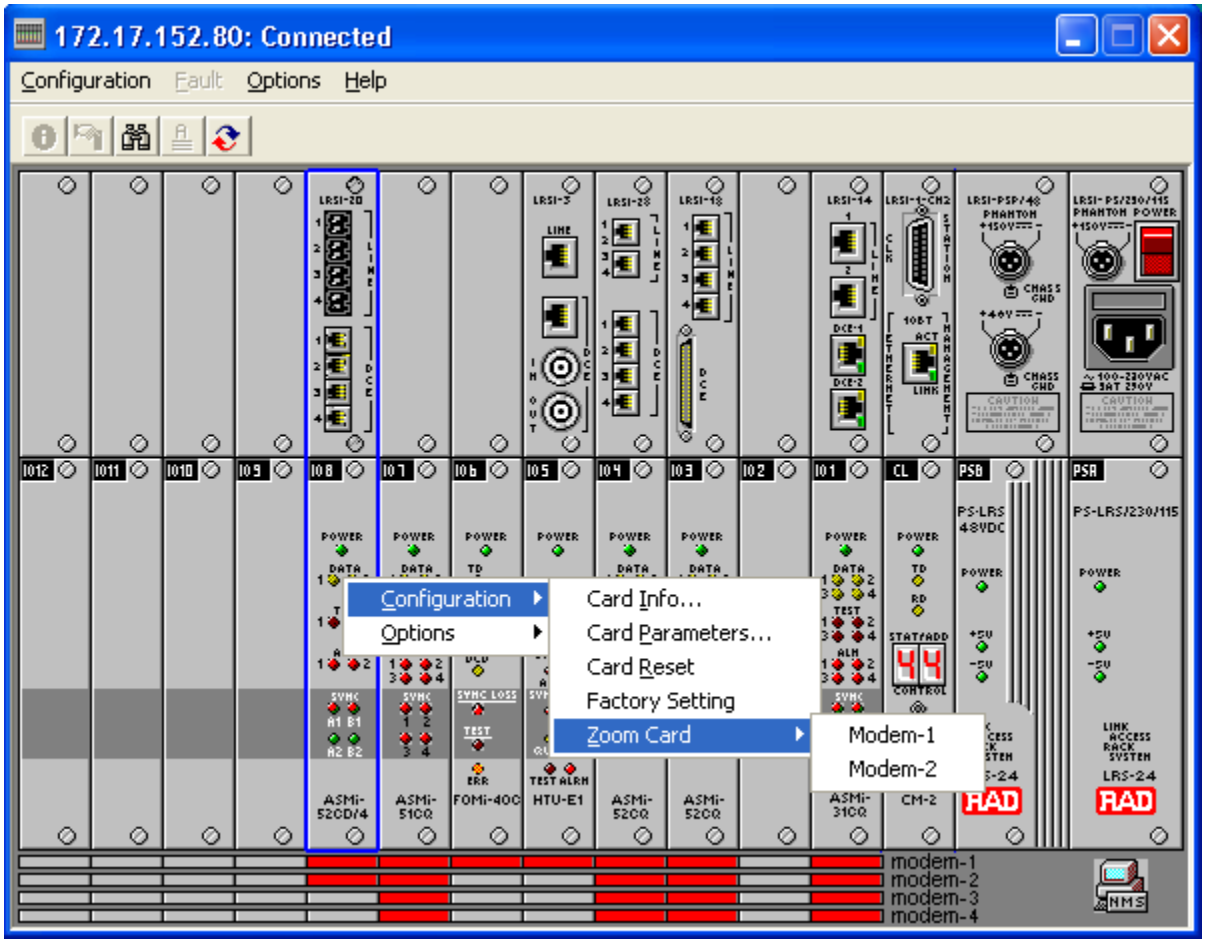


Figure 3-9. Selecting a Modem

5. Select a modem by clicking its radio button.
6. Click <**OK**>.

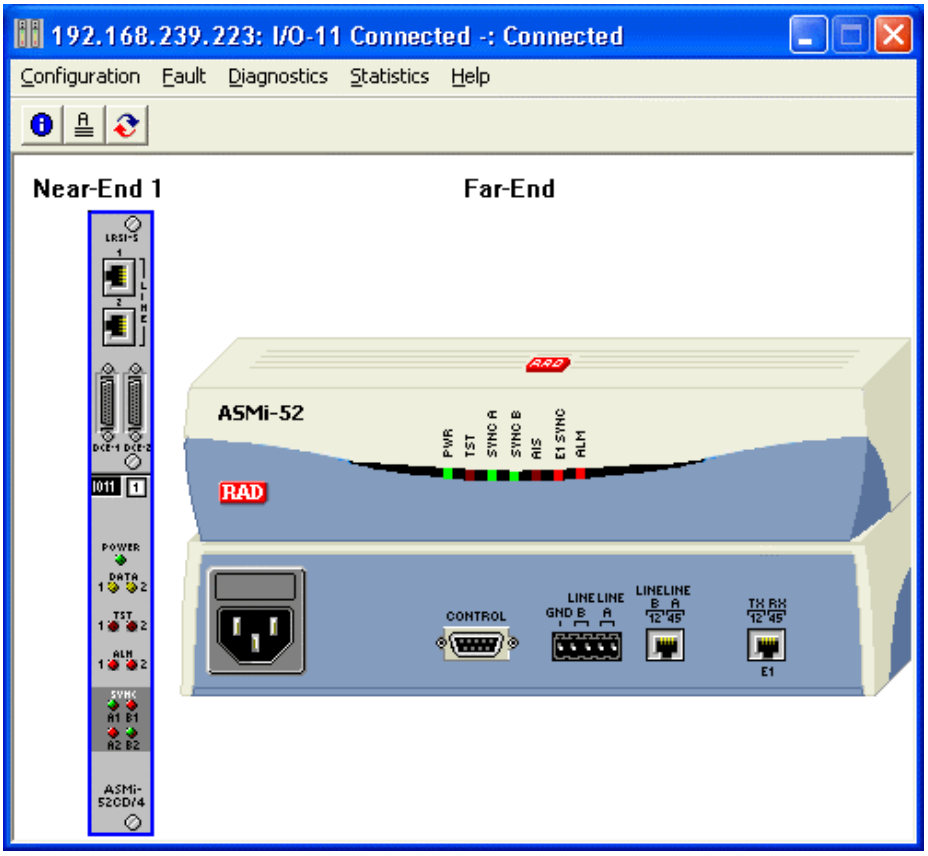


Figure 3-10. Zoom View of the Selected Modem/Card

Viewing and Modifying Card Parameters

You can view and modify card parameters for IMOD cards, (only for ASMi52/CD/CD4W/CQ).

➤ **To view card parameters (only for ASMi52/CD/CD4W/CQ):**

1. In the LRS-24 View window, select the relevant IMOD card (as described in *Managing Cards*).
2. Right click and select **Configuration > Card Parameters**.

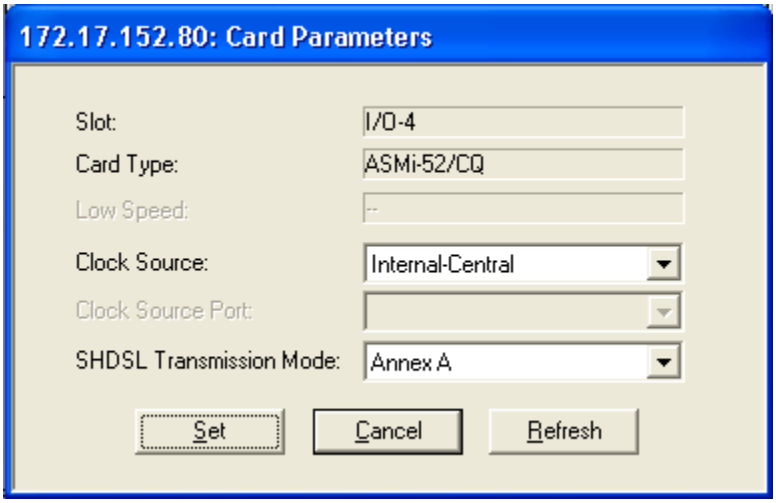


Figure 3-11. Card Parameters Dialog Box

3. Fill in the fields, as described in *Table 3-4.*
4. Click ‹**Set**› to implement the changes.

Table 3-4. Card Parameters

Parameter	Values / Remarks
Slot	A unique identification of the card slot position in the LRS-24 hub **IO-1..IO-12** Read-only
Card Type	**ASMi52/CD/CD4w/CQ** Read-only
Clock Source	For **ASMi-52/CD/CD4w/CQ**: **Internal-Central, External-Central, System-Central, Receive-Remote** ***Note:*** *External and Local-Ext are disabled for the interfaces: ETH-UTP, IP-UTP, ETH-Q, or ETH/BNC*
Clock Source Port	This field is enabled only if the value displayed in **Clock Source** field is External, Local-Ext, Remote-Rcv, or Receive **Modem-1, Modem-2, Modem-3, Modem-4** For ASMi-52 family, this field is enabled for DTE= E1 only.
SHDSL Transmission Mode	For **ASMi-52/CD/CD4w/CQ** **Annex A=bit 0 – region 1** **Annex B=bit 1 region 2** Read-write only for Central Unit (Modem Port Line Clock Source ‹ › receive) Other parameters are Set for the card level. There is only one profile for each card, and there is no option for adding another profile to this card, or removing the exsisting one

Resetting the Card

This section explains how to reset the modems on the card according to the last changes saved, as well as to the default factory setting.

Note

Card Reset is enabled only for LRS-24 version higher than 3.0 for IMOD cards: \ASMi52/CD/CD4w/CQ.

Resetting to Last Saved Configuration

The Reset command resets all the modems on the card to the last configuration that was saved.

➤ **To reset the card:**

1. In the LRS-24 View window, select the relevant IMOD card (as described in *Managing Cards*).
2. Right click and select **Configuration** › **Card Reset**.

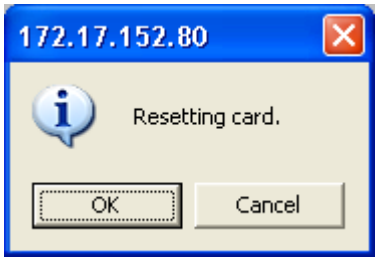


Figure 3-12. Card Reset Confirmation Dialog Box

3. Click ‹**OK**› to continue Reset.

   All the modems on the selected card are reset.

Resetting to Factory Settings

Note

Factory setting is enabled only for LRS-24 version › 3.3 for IMOD cards: ASMi-52/CD/CD4W/CQ.

➤ **To reset to factory setting:**

1. In the LRS-24 View window, select the relevant IMOD card (as described in *Managing Cards*).
2. Right click and select **Configuration** › **Factory Settings**.

Figure 3-13. Reset Card to Factory Settings Confirmation Dialog Box

3. Press ‹**OK**› to confirm.

Note

If the remote unit is a standalone unit, there is an option for HW Reset. If the remote unit is a card, there is an option for Modem Reset and HW Reset.

Managing Modems

This section explains how to manage the LRS-24 modems (and related cards and ports) using RADview/TDM.

Note

All modem management operations are performed in the Zoom view.

Managing modems includes the following tasks:

- Selecting modems
- Managing modems/cards in Zoom view
- Managing near-end (local) and far-end (remote) modems

- Managing modem ports.

Additional modem operations are discussed in the following chapters:

- Managing modem alarms, see *Chapter 6*.
- Modem performance monitoring, diagnostic testing, see *Chapter 7*.
- LRS-24 card LED indicators, see *Appendix B*.

Selecting Modems/Launching Zoom View

Before you can perform modem operations, you must first zoom in on a LRS-24 card and select a modem.

➤ **To select a modem/launch Zoom view:**

1. In the LRS-24 View window, double click on a card.

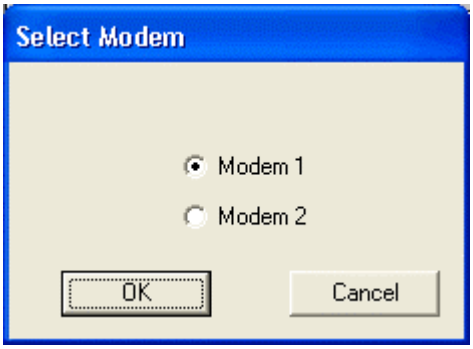


Figure 3-14. Select Modem Dialog Box

2. Select a modem by clicking its radio button. (For CD or CQ cards the select modem dialog box, as shown above, appears. The number of available modems corresponds to the card type. CD modems, for example, contain only two modems.)
3. Click ‹**OK**›.

   The Zoom view of the selected modem/card opens (except for PS cards, for which Zoom is not available). Sample Zoom views of various cards are shown in *Figure 3-15, Figure 3-16, Figure 3-17,* and *Figure 3-18.*

   Now you can begin to perform modem operations.

Note *When viewing IMOD card information, open the menu: Configuration › Card Parameters. Card parameters cannot be opened from the zoom menu.*

Managing Modems/Cards in Zoom View

RADview/TDM LRS-24 allows you to manage modem cards in Zoom view. For instructions on how to zoom in on a card, see *Selecting Modems/Launching Zoom View*.

This section includes the following tasks:

- Zooming in on IMOD and SMOD cards
- Viewing interface information
- Viewing and modifying modem (dial-out) parameters.

IMOD and SMOD Cards

Modem cards in the LRS-24 hub operate opposite or in conjunction with:

- A standalone modem.
- Another card
- A rack.

You zoom in on IMOD and SMOD modem cards from the LRS-24 View window, as described in *Selecting Modems/Launching*.

All other modem-card operations are performed directly in the Zoom view.

The Zoom view displays both the card and modem, and indicates which unit is near-end or far-end (as shown in *Figure 3-16* and *Figure 3-17*). The Zoom view always displays the selected card as the near-end modem on the left side of the view.

When an **SMOD** card is zoomed, RADview/TDM checks the Control parameter to connect it. If it is **Terminal** then the following message appears:
`No connection with SMOD.`

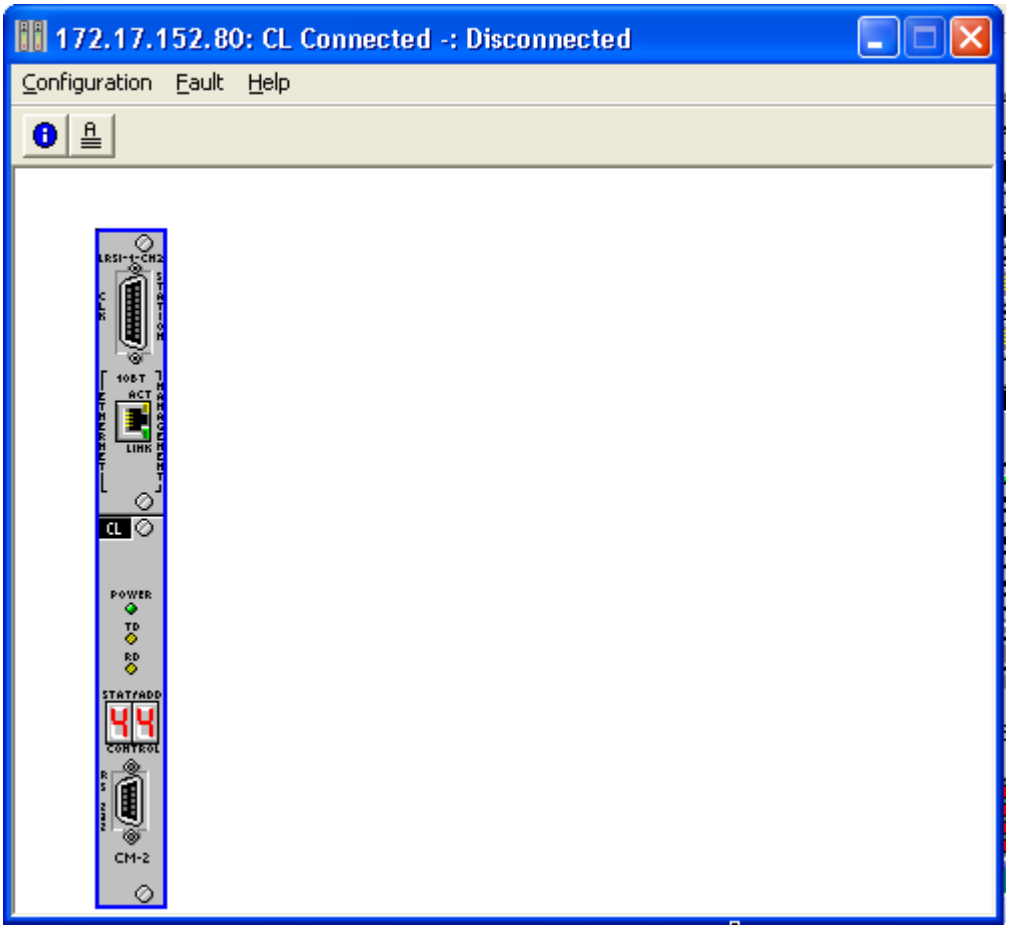


Figure 3-15. CM-2 Zoom View Window

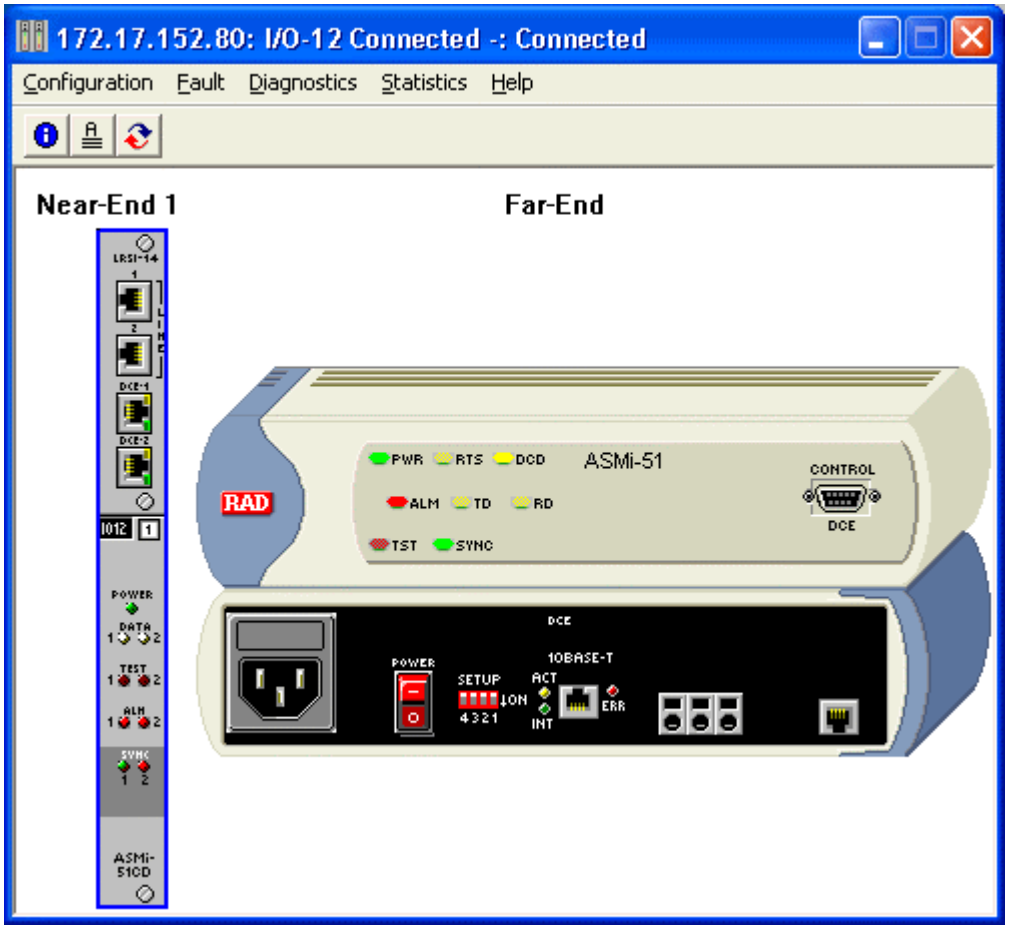


Figure 3-16. Zoom View Window ASMi-51CD Opposite Standalone Modem

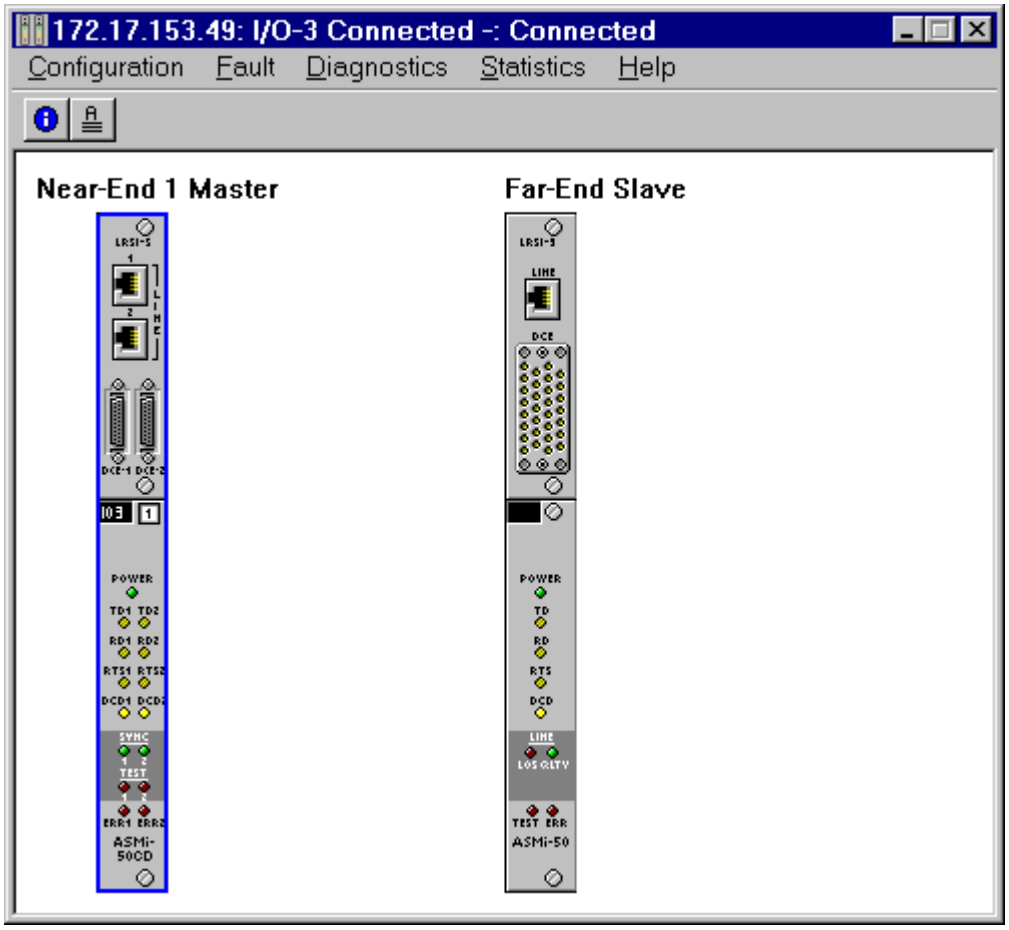


Figure 3-17. Zoom View Window ASMi-50CD opposite ASMi-50C

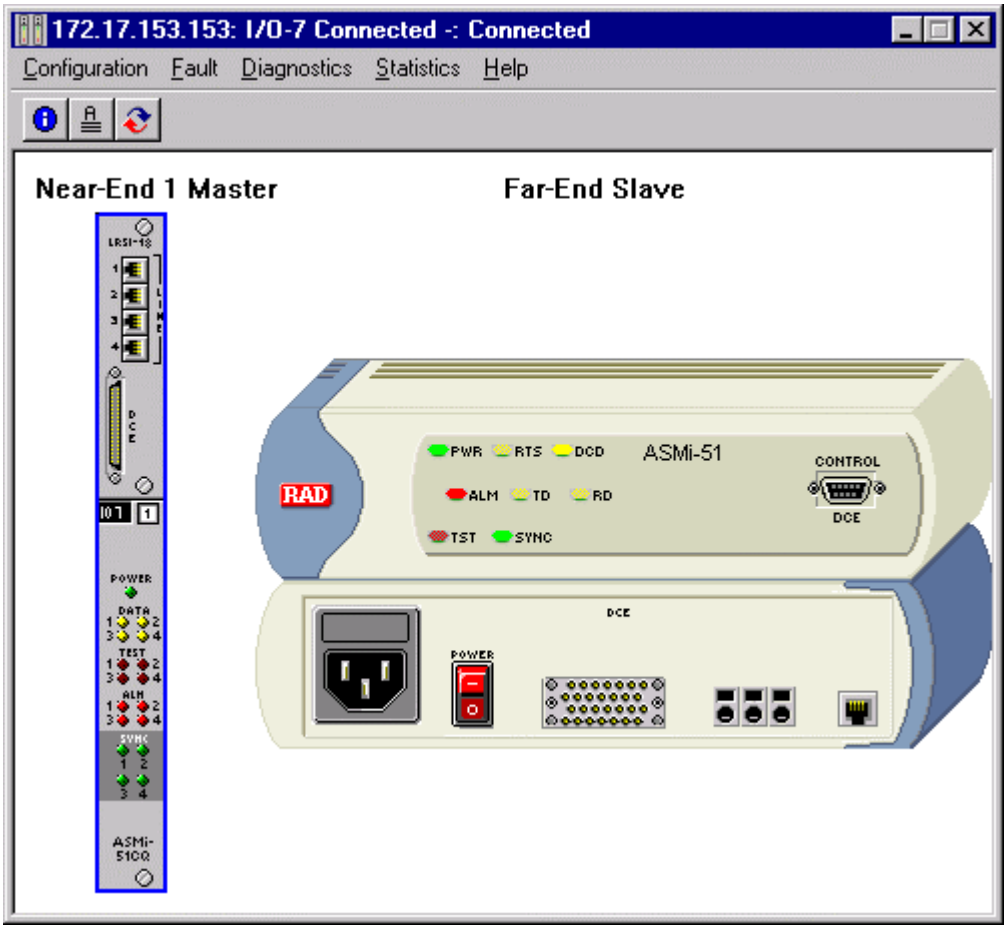


Figure 3-18. Zoom View Window ASMi-51CQ opposite Standalone Modem

For SMOD modem cards, you can view card information only in the Zoom view.

For the PS card, however, you can view card information in the LRS-24 View window (see *Viewing PS Card and CM-2 Card Information* in Chapter 3).

Viewing Interface Information for CM-2 Cards

In the Zoom view, you can view configuration parameters for each interface on the CM-2 cards.

You can view the following interface information:

- Interface configuration parameters
- Interface modem parameters.

Viewing CM-2 Interface Configuration Parameters

You can view interface configuration parameters for CM-2 cards.

➤ **To view interface configuration parameters for the CM-2 card:**

1. In the Zoom view, select the CM-2 card.

   A blue border outlines the selected card.

2. Right-click and select **Configuration** › **Mng. Interface Info.**

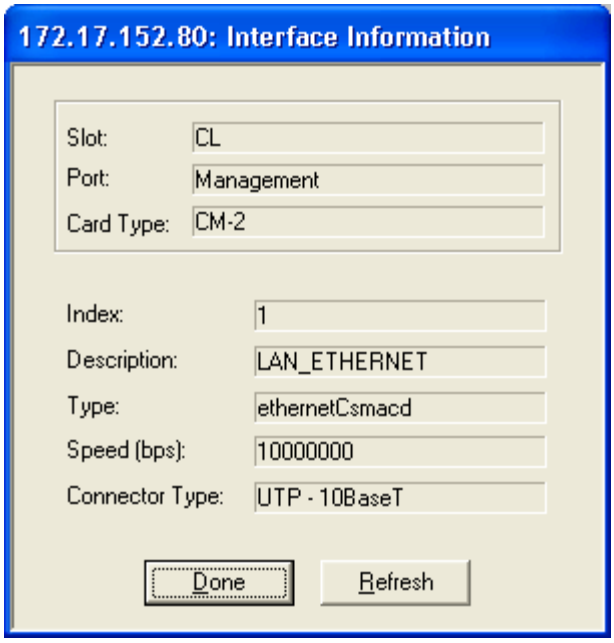


Figure 3-19. Interface Information Dialog Box

3. View the fields, as described in *Table 3-5*.
4. Click ‹**Done**› to close the dialog box.

Table 3-5. Interface Information Parameters

Parameter	Possible Values / Remarks
Slot	A unique identification of the card slot position in the LRS-24 hub **CL** Read-only
Port	**Management** Read-only
Card Type	The type of card that contains the selected interface **CM-2** Read-only
Index	The unique interface number assigned to the port Read-only
Description	A description of the port Read-only
Type	The type of port Read-only
Speed (bps)	The speed of data through the connection Read-only
Connector Type	The connector type **BNC-10Base2**, **UTP-10BaseT**, **Cross UTP-10BaseT**, **V.35**, **V.35WA**, **RS-530**, **RS-530WA**, **X.21**, **G.703** Read-only

Viewing and Modifying Modem Dial-Out Parameters

You can view and modify modem dial-out parameters.

Note

Viewing and modifying dial-out parameters is available for CM-2 cards, however, it is not supported for Agent version 3.5.

➤ **To view modem parameters for a specific interface:**

1. In the Zoom view, select the CM-2 card (interface) by clicking on it.
2. Right-click and select **Configuration** › **Modem Parameters**.

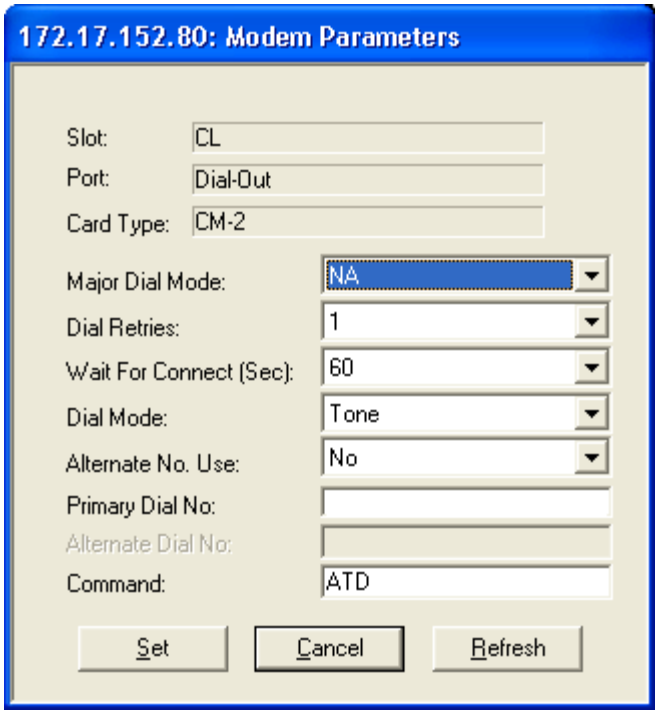


Figure 3-20. Modem Parameters Dialog Box

3. Fill in the fields, as described in *Table 3-6*.
4. Click ‹**Set**› to implement the changes.

Table 3-6. Modem Parameters Dialog Box Parameters

Parameter	Possible Values / Remarks
Slot	A unique identification of the card slot position in the LRS-24 hub **CL** Read-only
Port	**Management (Dial-out)** Read-only
Card Type	Type of card that contains the selected interface **CM-2** Read-only
Major Dial Mode	The Major Dial mode. The options include: **NA/Major**

Parameter	Possible Values / Remarks
Dial Retries	The number of dial retries. The options include: **0–8**
Wait for Connect (Sec)	The Wait for Connect time in seconds. The options include: **30**, **45**, **60** seconds
Dial Mode	The Dial mode. The options include: **Tone/Pulse**
Alternate No. Use	Alternate number. The options include: **Yes/No**
Primary Dial No.	Primary Dial Number Up to 20 characters
Alternate Dial No.	Alternative Dial Number Up to 20 characters
Command	Enter a command value Up to 20 characters

Managing Near-End and Far-End Modems

In the Zoom view, you can perform management operations for near-end (local) and far-end (remote) modems (and related interface cards). The procedures are basically identical for each type. Some available parameters per specific modem type differ. These differences are noted below where appropriate.

You begin performing operations on near-end or far-end modems, by first selecting the near-end or the far-end modem in the Zoom view.

Managing near-end and far-end modems includes the following tasks:

- Viewing IMOD modem card information (near-end only)
- Viewing and modifying the modem mode (near-end only)
- Viewing modem information
- Viewing and modifying user information.

Additional operations for managing near-end and far-end modems are discussed in subsequent chapters:

- *Managing Modem Alarms* in *Chapter 6*
  - *Viewing Active Modem Alarms*
  - *Viewing Alarm History in the Alarm Buffer*
  - *Clearing Alarms in the Alarm Buffer*
  - *Masking Modem Traps.*
- *Modem Performance Monitoring* in *Chapter 7*
  - *Running and Viewing Diagnostics Tests*
  - *Viewing Modem Statistics*.

Viewing IMOD Modem Card Information

➤ **To view card information for an IMOD modem:**

1. In the Zoom view, select the modem (near-end only), right-click and select **Configuration** › **Card Info**.

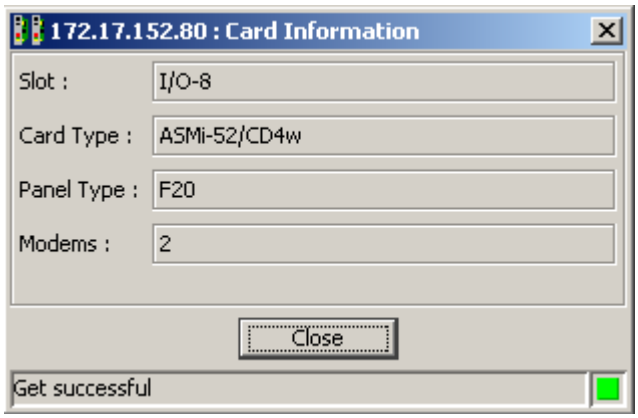


Figure 3-21. Card Information Dialog Box

2. Click ‹**Done**› to close the dialog box.

Table 3-7. Card Information Parameters (for Near-end IMOD Modems)

Parameter	Possible Values / Remarks
Slot	**I/O-1** to **I/O-12**, **PS-A**, **PS-B**, **CL** Read-only
Card Type	**ASMi-24/C**, **ASMi-31/C**, **ASMi-50/C**, **ASMi-50/CD**, **FOMi-E1/T1C**, **FOMi-E1/T1CD**, **FOMi-40C**, **FOMi-40CD**, **MTMi-20C**, **ASM-40CD**, **ASMi-31CQ**, **ASMi-51CD**, **ASMi-51CQ**, **ASMi-52CD/CD4W/CQ** For CDs only, the modem type and number are displayed (for example, **ASM-40CD–Modem 1**) Read-only
Clock Source	**Internal-Central**, **External-Central**, **System-Central**,
Panel Type	**F2**, **F3**, **F5**, **F6**, **F7**, **F9** to **F14**, **F18** to **F23**, **FO1** to **FO20**, **PS 230V & 115V**, **PSP 230V & 115V**, **PS 48V**, **PSP 48V**, **F1-CM2**, **F1-CM2 NEW**, **F2-CM2**, **F3-CM2** Read-only
Chassis Connected to Ground	**Checked** (connected), **Unchecked** (disconnected) For ASM-40 modems only Read-only

Viewing and Modifying the Modem Mode

Note *Viewing and Modifying the Modem Mode is not applicable for ASMi-51CD, ASMi-51-CQ, ASMi-51 or ASMi-52CD/CD4W/CQ units.*
Modem Mode does not work for ASMi-50, versions≥ 0.8x.

➤ **To view and modify the modem mode:**

1. In the Zoom view, select the modem (near end only), right-click and select **Configuration** › **Modem Mode**.

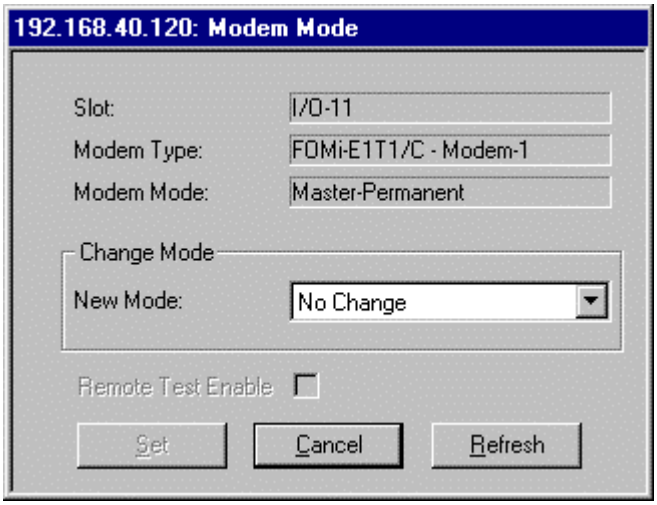


Figure 3-22. Modem Mode Dialog Box

2. View the fields, as described in *Table 3-8*.
3. In the New Mode field, from the drop-down list, select a modem mode.
4. Click ‹**Set**›.

   A confirmation box appears, displaying the message: "Changing the Modem's Mode".

5. Click ‹**OK**› to confirm the changes.

Table 3-8. Modem Mode Parameters

Parameter	Possible Values / Remarks
Slot	**I/O-1** to **I/O-12** Read-only
Modem Type	**ASMi-24/C**, **ASMi-31/C**, **ASMi-50/C**, **ASMi-50/CD**, **FOMi-E1/T1C**, **FOMi-E1/T1CD**, **FOMi-40C**, **FOMi-40CD**, **MTMi-20C**, **ASM-40CD**, **ASMi-31CQ** For CDs only, modem type and number displayed (for example, **ASM-40CD–Modem 1**) Read-only
Modem Mode	**Master-Permanent**, **Master-Temporary**, **Slave-Permanent**, **Slave-Temporary** Read-only
Change Mode New Mode	When Modem Mode = **Master-Permanent**, the options are: **No Change**, **Slave-Temporary** When Modem Mode = **Slave-Temporary**, the options are: **No Change**, **Master-Permanent** Change Mode exists only if Modem Mode is **Master-Permanent** or **Slave-Temporary**.
Remote Test Enable	**Checked**, **Unchecked** For ASMi-31CQ only

Viewing Modem Information

➤ **To view IMOD modem information:**

1. In the Zoom view, select the modem (near end or far end), right-click and select **Configuration** › **Modem Info**.

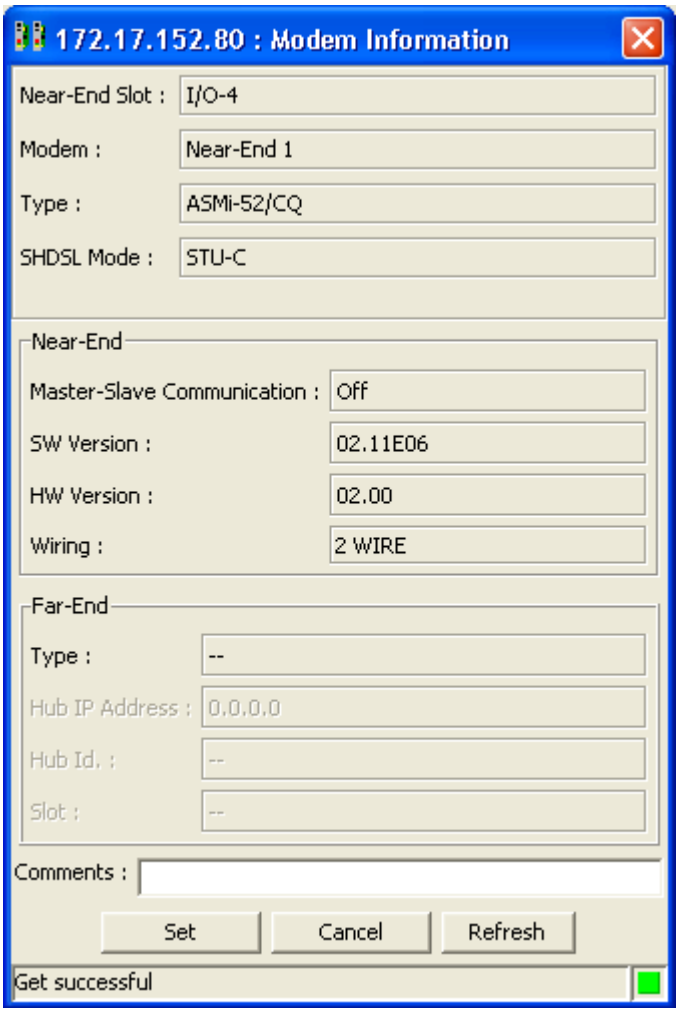


Figure 3-23. Modem Information Dialog Box

2. Fill in the fields, as described in *Table 3-9*.
3. Click ‹**Set**› to implement the changes.

Note

You cannot change the remote Modem Mode of ASMi-50C from 2-wire to 4-wire. To overcome this problem you must configure the central and remote modems.

Table 3-9. Modem Information Parameters

Parameter	Possible Values / Remarks
Slot	I/O-1 to I/O-12 Read-only
Modem	Near-End or Far-End 1/2 for CD, 1/2/3/4 for CQ Read-only
Near-End	
Type	ASMi-24/C, ASMi-31/C, ASM-40/CD, ASMi-50/C, ASMi-50/CD, FOMi-E1/T1, FOMi-E1/T1/CD, FOMi-40, FOMi-40/CD, MTMi-20C, ASMi-31CQ, ASMi-51CD, ASMi-51CQ, ASMi-52 CD/CD4w/CQ For CDs and CQs only, modem type and number displayed (for example, ASM-40CD–Modem 1) Read-only
Mode	Master-Permanent, Master-Temporary, Slave-Permanent, Slave-Temporary Read-only
SHDSL Mode	Available for ASMi-52 family only. STU-C, STU-R (for Modem Port Line Clock Source) Read-only
Master-Slave Comm	On or Off Read-only
SW Version	Software version of the modem Read-only
HW Version	Hardware version of the modem Read-only
Wiring	2 Wire, 4 Wire Enabled only for ASMi-50, ASMi-31CQ, ASMi-52/CD4W For ASMi-52/CD4W this field is a combo-box (RW) enabled for Near-End modems or ASMi-50C only. ***Note**: Changing the wiring may disdconnect the reomote modem.*
Far-End	
Type	ASMi-24, ASMi-24/C, ASMi-24/R, ASMi-31, ASMi-31/C, ASMi-31CQ, ASMi-31/R, ASM-40/CD, ASMi-50, ASMi-50/C, ASMi-50/CD, ASMi-50/R, FOMi-40, FOMi-40/C, FOMi-40/CD, FOMi-E1/T1, FOMi-E1/T1/C, FOMi-E1/T1/CD, MTMi-20, MTMi-20/C, MTMi-20R, ASMi-51CD, ASMi-51CQ, ASMi-52/CD, ASMi-52/CD4w, ASMi-52/CQ, ASMi-52 For CDs and CQs only, modem type and number displayed (for example, ASM-40CD–Modem 1) Read-only
Hub IP Address	The IP address of the CM-2 agent, representing the hub Enabled only if the far-end modem is an LRS-24 card Read-only

Parameter	Possible Values / Remarks
Hub Id	Hex characters identifying the hub Enabled only if the far-end modem is an LRS-24 card Read-only
Slot	The far-end modem slot number, **I/O-1** to **I/O-12** Enabled only if the far-end modem is an LRS-24 card Read-only
I-Type	**Yes** or **No** Enabled only for FOMi-40 and FOMi-E1/T1 modem Read-only
Comments	User may type any freeform text

Note *When configuring a card opposite a card, the System Information dialog box sometimes displays incorrect values for the fields, Far-End Hub ID and Far-End IP Address. This problem exists for the following modems: FOMi-E1/T1C, FOMi-E1/T1CD (modem #2), ASMi-24, ASMi-31, ASMi-50CD (modem #2).*

Viewing Port Configuration

➤ **To view the port configuration:**

1. In the Zoom view, select the modem (near end or far end), right-click and select **Configuration** > **Ports Config**.

   (If there is communication between Near-End and Far-End modems, then NMS gets the value of the Interface Type (IR) for **both** Near-End and Far-End modems.)

2. Click the tab of the port to configure.

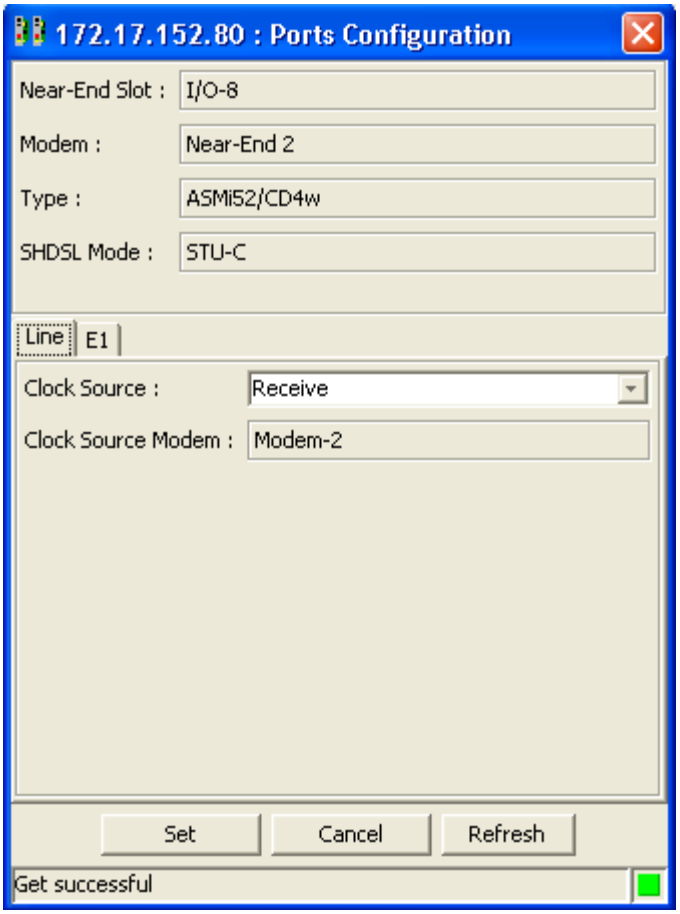


Figure 3-24. Ports Configuration Dialog Box – Line Tab

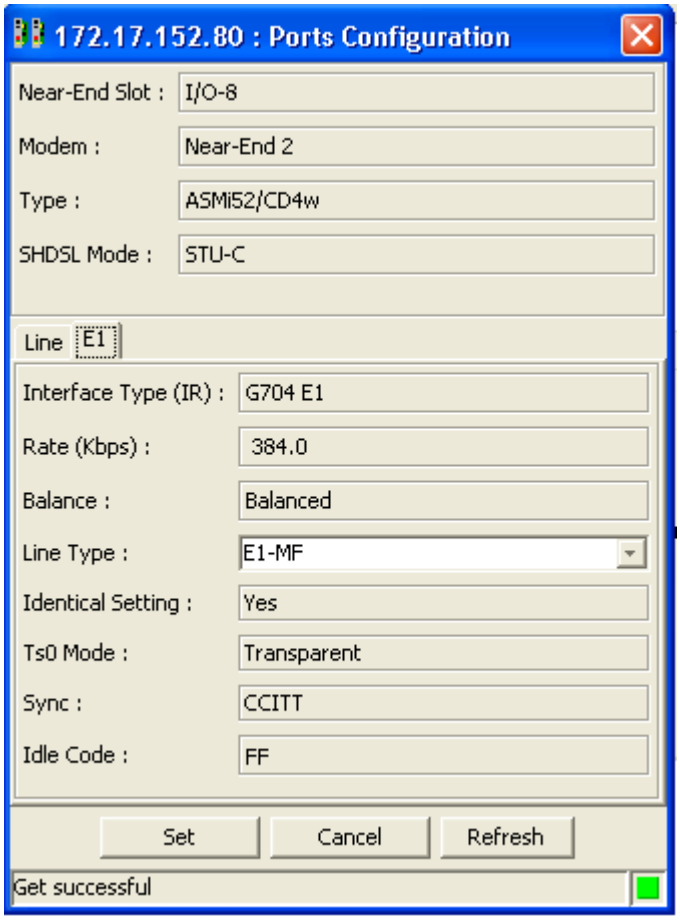


Figure 3-25. Ports Configuration Dialog Box – E1 Tab

3. Fill in the fields, as described in *Table 3-6*, which lists some of the Ports Configuration dialog box parameters. For descriptions of additional fields relevant to specific modem types, see the following section.
4. Click <**Set**> to implement the changes. ([Set] is disabled for **Interface Type (IR) = NO IR.**

Configuring Modem Port Parameters

To configure the port parameters, set the **Modem Mode** as **Master**. If the **Modem Mode** is set to **Slave**, the ports configuration parameters are not configurable.)

Note *Viewing and Modifying the Modem Mode is not applicable for ASMi-51CD, ASMi-51-CQ, ASMi-51 or ASMi-52CD/CD4W/CQ units. Modem Mode does not work for ASMi-50, versions≥ 0.8x.*

For instructions on how to set the modem mode, refer to *Viewing and Modifying the Modem Mode*

General limitations for various Ports Configuration fields are as follows:

- For the DTE Rate field, RADview checks the selectable values for both the near and far ends. Only the common values are displayed in the dialog boxes of both modems. If no common values are found, then the selectable list is available for each modem separately.

- For the Line-Clock Source field, RADview checks the selectable values for both near-end and far-end modems. Only the common values are displayed in the dialog boxes of both modems. The values that end in **– Ext** or **– Ext–Auto** are not selectable if the interface type is Ethernet or ETH/BNC.
- For the DTE field, **RLB Enable** and **LLB Enable** are disabled for the X.21, G.703 (64k), G.703–E1, G703-T1, Ethernet, and ETH/BNC interface types.
- You cannot change configuration while software download is in progress.

Viewing and Configuring Modem Ports

In the Zoom view, you can manage the ports of the LRS-24 modems. (For instructions on how to zoom in on a modem card, see *Selecting Modems/Launching Zoom View*.

Managing ports includes the following tasks:

- Viewing modem port parameters
- Configuring modem ports
- Viewing port status.

➤ **To view and configure modem ports:**

- In the Zoom view, select the modem (near-end or far-end), right-click and select **Configuration** > **Ports Config**.

  The relevant Ports Configuration dialog box opens (For instructions on how to configure modem ports parameters and some general limitations, see *Configuring Modem Port Parameters*.)

The following sub-sections contain figures and tables showing the specific port configuration parameters for the following cards:

- ASMi-24C
- ASMi-31C
- ASMi-31CQ
- ASM-40CD
- ASMi-50C
- ASMi-50CD
- ASMi-51CD
- ASMi-51CQ
- ASMi-51CQ-E1
- ASMi-52/CD
- ASMi-52/CD4W
- ASMi-52/CQ
- FOMi-40C
- FOMi-40CD
- FOMi-E1/T1C

- FOMi-E1/T1CD
- MTMi-20C.

Configuring ASMi-24C Ports

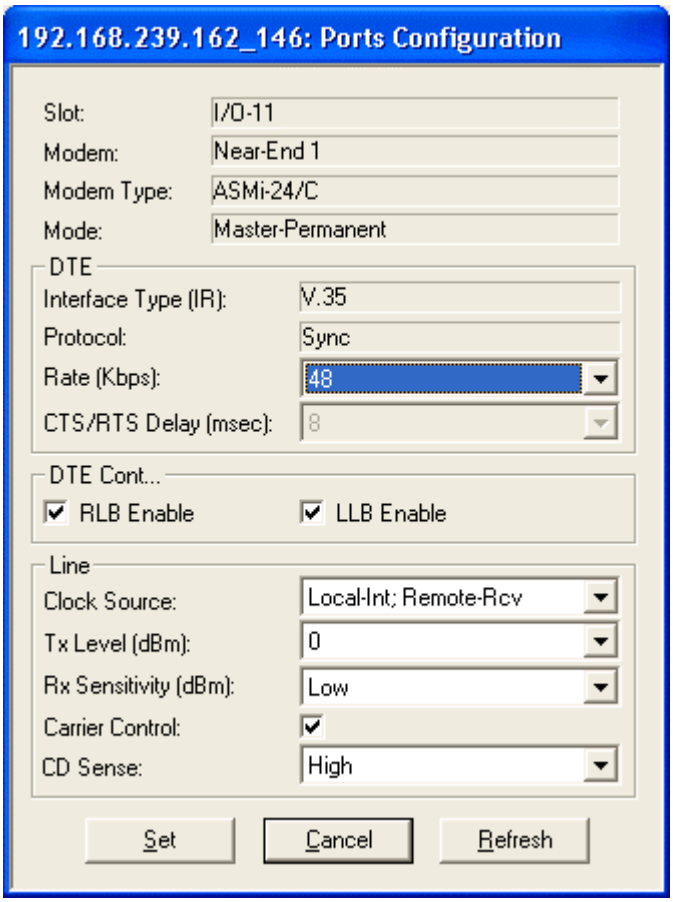


Figure 3-26. ASMi-24C Ports Configuration Dialog Box

Table 3-10. ASMi-24C Ports Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **X.21**, **V.36**, **V.35**, **G.703** (64K), **No IR**, **ETH/BNC**, **ETH/UTP** Read-only
Protocol	**Sync** Read-only
Rate (Kbps)	**48**, **56**, **64**, **72**, **96**, **112**, **128**, **144**
CTS/RTS Delay (msec)	**8**, **70** Read-only
DTE Cont...	
RLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703, (64k), Ethernet or ETH/BNC

Parameter	Possible Values / Remarks
LLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703, (64k), Ethernet or ETH/BNC

Parameter	Possible Values / Remarks
Line	
Clock Source	**Local-Ext; Remote-Rcv** (N/A with Ethernet or ETH/BNC) **Local-Int; Remote-Rcv** **Local-Rcv; Remote-Int** **Local-Rcv; Remote-Ext** (N/A with Ethernet or ETH/BNC) **Local-Ext-Auto; Remote-Rcv** (N/A with Ethernet or ETH/BNC) **Local-Rcv; Remote-Ext-Auto** (N/A with Ethernet or ETH/BNC)
Tx Level (dBm)	**–6**, **0**
Rx Sensitivity (dBm)	**Low**, **High**
Carrier Control	**Off** or **On** (when checked)
CD Sense	**High**, **Low**

Configuring ASMi-31C Ports

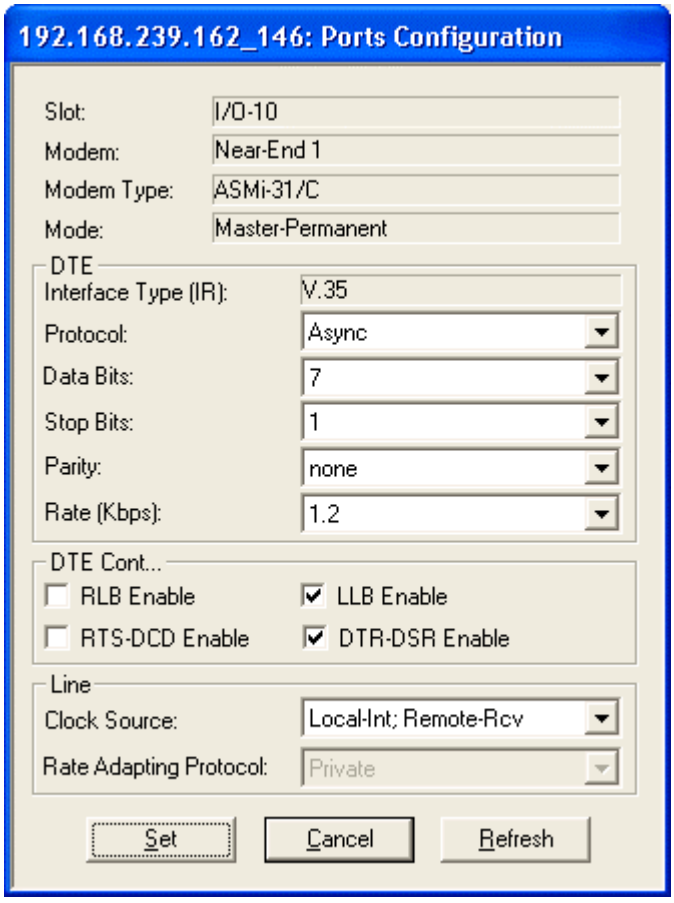


Figure 3-27. ASMi-31C Ports Configuration Dialog Box

Table 3-11. ASMi-31C Port Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **X.21**, **G.703**, **V.35**, **G.703** (64K), **No IR**, **ETH/BNC, ETH/UTP** Read-only
Protocol	**Sync**, **Async**
Data Bits	**5**, **6**, **7**, **8** Enabled if **Protocol=Async**
Stop Bits	**1**, **2** Enabled if **Protocol=Async**
Parity	**None**, **Odd**, **Even** Enabled if **Protocol=Async**
Rate (kbps)	For Protocol = Sync: **64, 128** (when far-end modem is ASMi-31 and near-end modem is ASMi-31CQ) **1.2, 2.4, 4.8, 9.6, 16, 19.2, 32, 38.4, 48.0, 56, 64.0, 128** For Protocol = Async: **1.2**, **2.4**, **4.8**, **9.6**, **19.2**, **38.4**, **57.6**, **115.2** **57.6** and **115.2** are available only for versions > 0.1.
DTE Cont...	
RLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703, (64k), Ethernet, and ETH/BNC.
LLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703, (64k), Ethernet, and ETH/BNC.
RTS-DCD Enable	**Disable**, **Enable** (when checked)
DTR-DSR Enable	**Disable**, **Enable** (when checked)
Line	
Clock Source	Read-only for the far-end modem for software version less than 1.00; otherwise, it is Read/Write. For DTE1 Protocol = Sync: For software versions less than 1.00 **Local-Ext; Remote-Rcv** N/A with Ethernet and ETH/BNC **Local-Int; Remote-Rcv** **Local-Rcv; Remote-Int** **Local-Rcv; Remote-Ext** For software versions less than 1.00 N/A with Ethernet and ETH/BNC

Parameter	Possible Values / Remarks
	Local-Ext-Auto; Remote-Rcv For software versions greater than 1.00 N/A with Ethernet and ETH/BNC **Local-Rcv; Remote-Ext-Auto** For software versions greater than 1.00 N/A with Ethernet and ETH/BNC
	For DTE1 Protocol = Async: **Local-Int; Remote-Rcv** **Local-Rcv; Remote-Int**
Rate Adapting Protocol	**Private**, **V110** ***Note:*** *V110 support is optional.* If protocol is **Private**, data bits can only be 7 or 8. For modem software version 0, data rates of 57.6 and 115.3 kbps are not supported. The following combinations are invalid: Software version is less than one and the Rate Adapting Protocol is equal to V110. Software version is greater than one and: Rate = **56 kbps** Rate adapting Protocol = **Private** Rate Adapting Protocol = **Private** and data bit values are **not** 7 or 8. Software version = **0** Rate = **57.6** or **115.2 kbps**.

Note *To switch from Sync mode to Async mode, you must first switch the Clock Source before changing the mode.*
Before performing the set operation NMS checks the software version value for both near-end and far-end modems, using the lower value. If the far-end modem is disconnected, only the near-end modem is taken into account

Configuring ASMi-31CQ Ports

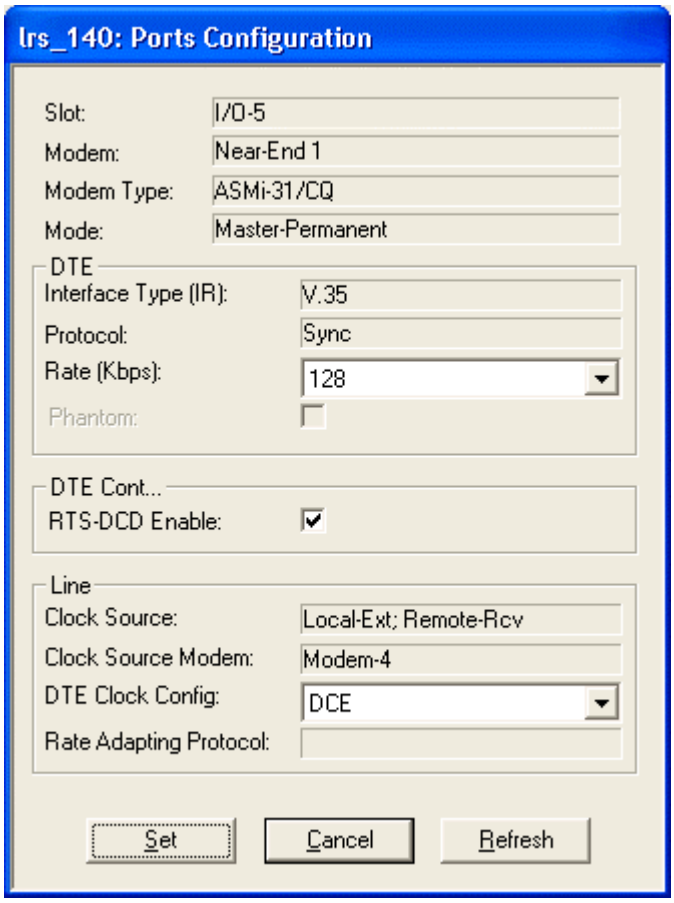


Figure 3-28. ASMi-31CQ Ports Configuration Dialog Box

Table 3-12. ASMi-31CQ Port Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **X.21**, **V.35**, **No IR** Read-only
Protocol	**Sync** Read-only
Rate (Kbps)	**64, 128**
Phantom	This field is disabled if the Phantom is Powered-Off.
RTS-DCD Enable	**Disable**, **Enable** (when checked)
Line	
Clock Source	**Local-Ext; Remote-Rcv, Local-Int; Remote-Rcv, Local-Sys; Remote-Rcv** Read-only

Parameter	Possible Values / Remarks
Clock Source Modem	**Modem-1, Modem-2, Modem-3, Modem-4** Read-only
DTE Clock Config	**DCE-External, DCE** This field is enabled if **Clock Source** is **Local-Ext or Remote-Rcv,** and if this modem is different than the modem selected in **Clock Source Port.**
Rate Adapting Protocol	**Private** Read-only

Configuring ASM-40CD Ports

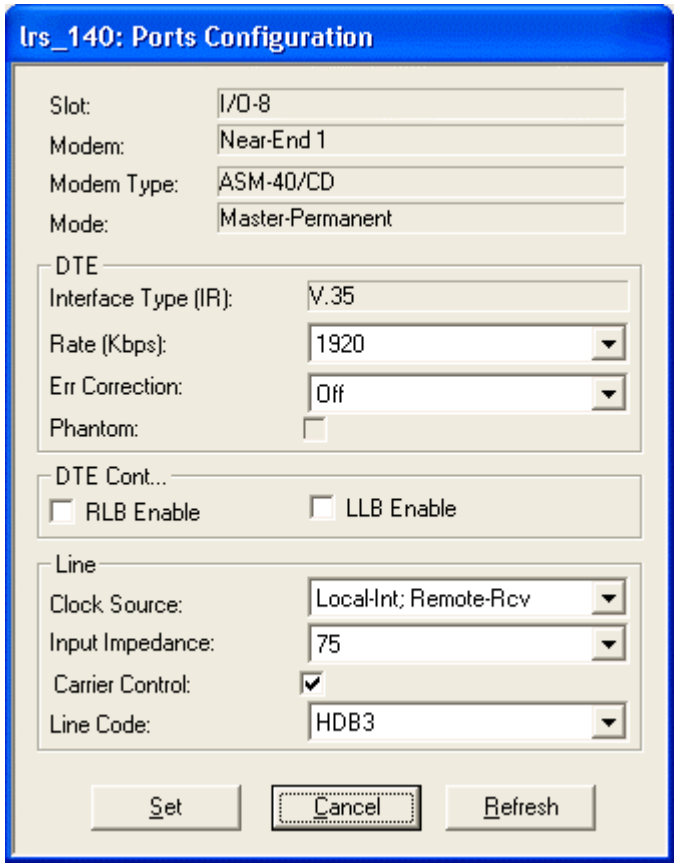


Figure 3-29. ASM-40CD Ports Configuration Dialog Box

Table 3-13. ASM-40CD Ports Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **X.21**, **V.35**, **ETH/ UTP**, **ETH/ BNC, G.703 (64K), HDB3** Read-only
Rate (Kbps)	**32**, **64**, **128**, **192**, **256**, **384**, **512**, **768**, **1024**, **1536**, **1544**, **1920**, **2048** Disabled if **Local-Ext-Auto; Remote-Rev** is displayed in the Clock source field
Err Correction	**Off**, **On-Random**, **On-Burst** Disabled if **Not Applicable** received from agent Disabled if rate is greater than 1024
Phantom	**Disable**, **Enable** (when checked) If the input impedance is 75 and phantom is enabled this field should not be checked.
DTE Cont...	
RLB Enable	**Disable**, **Enable** (when checked)
LLB Enable	**Disable**, **Enable** (when checked)
Line	
Clock Source	Clock Source is read-only for the far-end modem **Local-Int; Remote-Rcv** **Local-Rcv; Remote-Int** **Local-Ext-Auto; Remote-Rcv**N/A for Ethernet and ETH/BNC
Input Impedance	**75,100,120** The selectable values are **75, 120** if the rate (kbps) is divisible by 64 (Rate = n×64). The selectable value are **100** if the rate (kbps) is divisible by 56 (rate = n×56). Otherwise, the selectable values are 75, 100, 120.
Carrier Control	**Disable**, **Enable** (when checked)
Line Code	**AMI**, **HDB3**, **B8ZS** The selectable value are **HDB3** if the rate (kbps) is divisible by 64 (Rate = n×64). The selectable value are **AMI** and **B8ZS** if the rate (kbps) is divisible by 56 (Rate = n×56). Otherwise the selectable values are **AMI**, **HDB3**, **B8ZS**

Configuring ASMi-50C, ASMi-50CD Ports

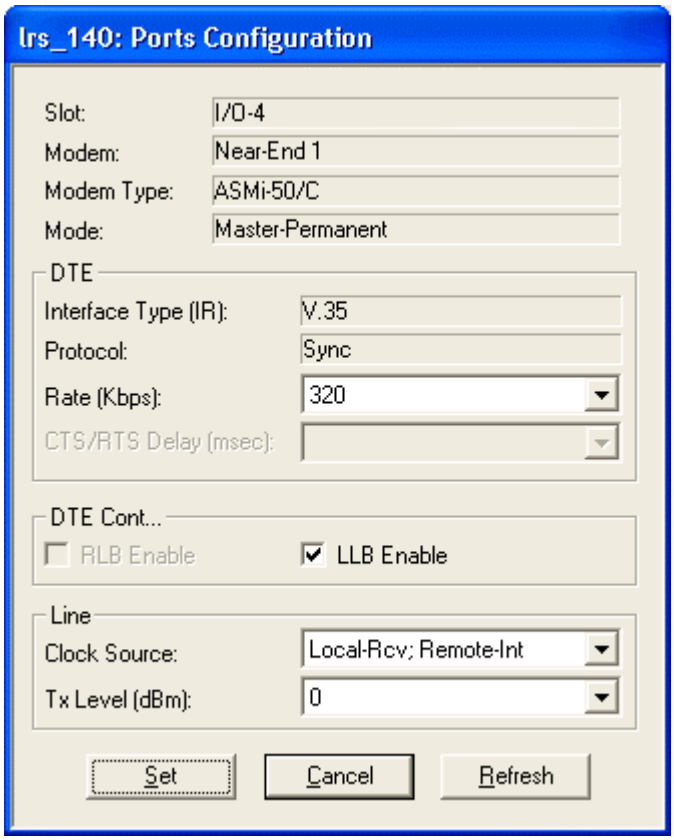


Figure 3-30. ASMi-50 Ports Configuration Dialog Box

Table 3-14. ASMi-50C Ports Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **RS-530 WA**, **X.21**, **V.35**, **V.35 WA**, **G.703** (64K), **ETH/UTP**, **ETH/BNC**, **ETH/Q**, **IP/UTP**, **No IR** Read-only
Protocol	**Sync** Read-only
Rate (Kbps)	**64**, **128**, **192**, **256**, **320**, **384**, **448**, **512**, **576**, **640**, **768**, **896**, **960**, **1024**, **1152** **256**, **384**, **512** and **768** are only supported by Version 1.0 Disabled if Clock source field is: Local-Ext-Auto; Remote-Rev or Local-Rcv; Remote-Ext-Auto
CTS/RTS Delay (msec)	**0**, **1**, **10**, **70**, **Disabled** For Version 1.0 **Disabled**, **Enabled** For Versions > 2.0
RLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703 (64k), Ethernet, ETH/BNC, ETH/Q, IP/UTP, G.703-E1, G.703-T1

Parameter	Possible Values / Remarks
LLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703 (64k), Ethernet, ETH/BNC, ETH/Q, IP/UTP, G.703-E1, G.703-T1
Line	
Clock Source	Clock Source is read-only for the far-end modem. **Local-Int; Remote-Rcv** **Local-Rcv; Remote-Int** **Local-Ext-Auto; Remote-Rcv** (N/A with Ethernet or ETH/BNC) **Local-Rcv; Remote-Ext-Auto** (N/A with Ethernet or ETH/BNC)
Tx Level (dBm)	**–6**, **0**, **4**, **10** for version 1.0 **0**, **4**, **10** for versions > 2.0

Note

- *Both ASMi-50 units must be new versions (ASMi-50-1) or both are old versions.*
- *For the older 2-wire version, SET is enabled in Modem Mode; however, if the modem is Slave-Temp you cannot change the Modem Mode.*

Configuring ASMi-51CD/CQ/CQ Ports

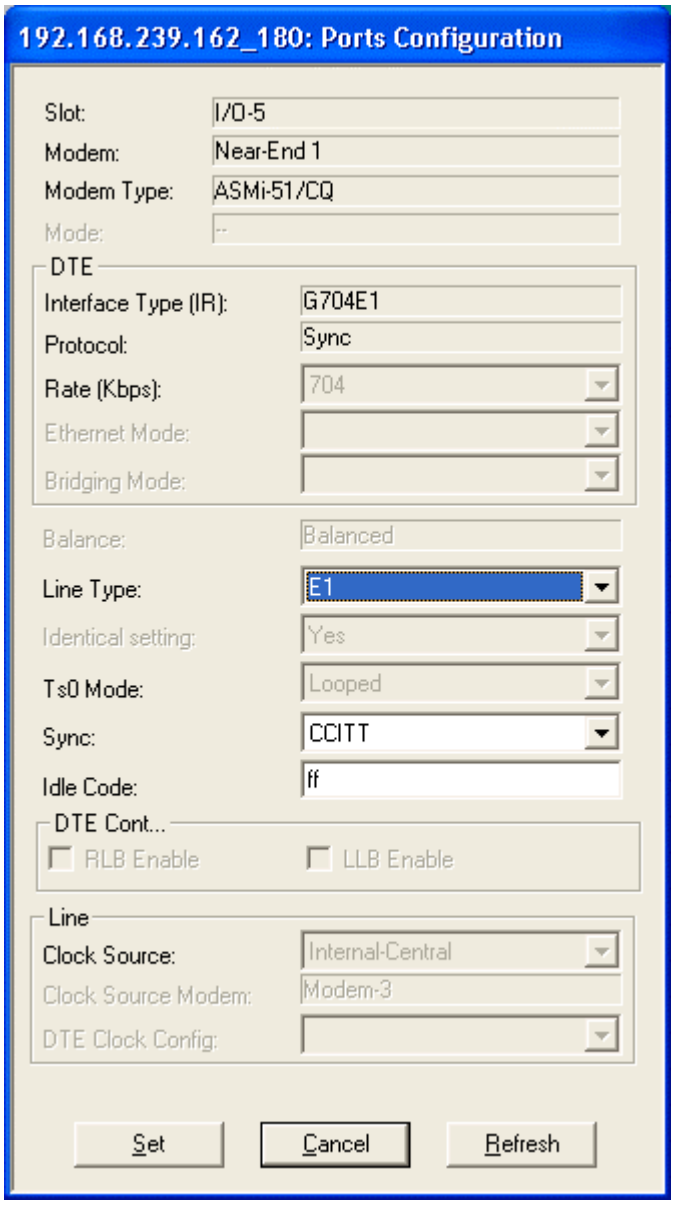


Figure 3-31. ASMi-51CQ Ports Configuration Dialog Box

Table 3-15. ASMi-51CD/CQ Ports Configuration

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**RS-530, X.21, G703-E1, G704E1, V.35, , ETH/UTP, IP/UTP, ETH/Q, ETH/BNC, No IR** Read-only
Protocol	**Sync** Read-only

Parameter	Possible Values / Remarks
Rate (kbps)	The NMS checks the selectable values of both sides (Near-End and Far-End), according to conditions specific for each modem (only the common values are displayed for selection fro both modems). In case there are no common values at all, the NMS displays the value read from agent, but does not allow setting it. i.e Clicking Set in such a case, prompts an error message: "No existing valid Rate, due to IR mismatch Near-Far." **64, 128, 192, 256, 320, 384, 448, 512, 576, 640, 704, 768, 832, 896, 960, 1024, 1088, 1152, 1216, 1280, 1344, 1408, 1472, 1536, 1600, 1664, 1728, 1792, 1856, 1920, 1984, 2048, 2304** ***Note:*** *1. The Rate is **always** 2048K for IR=G.703E1.* *2. If Rate = 2304, the agent sets all the other modem rates to the same value*.
Ethernet Mode	**Half Duplex, Full Duplex** ***Note:*** *This is enabled if Interface Type (IR) = ETH/Q, ETH/BNC, ETH/UTP, IP/UTP.*
Bridging Mode	**Filtering, Transparent** ***Note:*** *This is enabled if Interface Type (IR) = ETH/Q, ETH/BNC, ETH/UTP, IP/UTP.*
Balance	**Balanced, Unbalenced** ***Note:*** *This is enabled for SA versions* ≥3.5 when *Interface Type (IR) = G.704-E1.*
Line Type	**E1, E1-CRC,E1-MF, E1-CRC-MF, Unframed** ***Note:*** *This is enabled for versions* ≥3.5 when *Interface Type (IR) = G.704-E1.*
Identical Setting	**Yes, No** ***Note:*** *This is enabled for versions* ≥3.5 when *Interface Type (IR) = G.704-E1.*
Ts0 Mode	**NA, NoMng** (Looped), **Mng** (Transparent) ***Note:*** *This is enabled for versions* ≥3.5 when *Interface Type (IR) = G.704-E1.*
Sync	**62411, CCITT, Fast** ***Note****: This field is disabled if the value displayed for Line Type is Unframed.*
Idle Code	**00..FF** ***Note****: This field is disabled if the value displayed for Line Type is Unframed.*
DTE Cont.	***Note****: The following DTE Parameters are enabled only for ASMi-51/SA when IR=RS530 or V.35.*
RLB Enable	***Note:*** *This field (***RLB Enable***) is enabled for* ASMi-52/SA when IR=RS530 or V.35 (for near-end devices only). **RLB Enable** *is disabled when Interface Type (IR) is one of the following*: **X.21, G.703(64K), Ge.703-E1, G.703-T1, ETH/UTP, ETH/BNC, ETH/Q, IP/UTP (or NO IR).** ***RLB Enable*** *is disabled for the following modems:* ASMi-50(CQ&CD), ASMi-31(VER›0), MTMi-20, FOMi-40, ASMi-24, if ***modemMngLink=Off.*** Checked=Enable Unchecked=Disable
LLB Enable	Checked=Enable Unchecked=Disable
Line	
Clock Source	**Internal**, **External**, **System**, **Receive**

Parameter	Possible Values / Remarks
Clock Source Modem	**Modem-1, Modem-2, Modem-3, Modem-4** ***Note**: This field is enabled only if the value displayed in **Clock Source** is **External** or **Receive.***
DTE Clock Config	**DCE-External, DCE** This field is enabled if the value displayed in **Clock Source** above is **Local-Ext ; Remote-Rcv,** and if this modem is different than the modem selected in **Clock Source Port**. For ASMi-51/CQ/SA/CD, ASMi-52 CD/CD4w/CQ the field **Clock Source** is disabled if one of the following values displayed for **Interface Type** (**IR**): **ETH/UTP, IP/UTP, ETH/Q.** For all other modems: The field **Clock Source:** "...-Ext" and "...-Ext-Auto" values are not selectable when Interface Type (IR) of the **Far-End** is **ETH/UTP** or **ETH/BNC**. The field **Clock Source:** "Ext..." and "Ext-Auto..." values are not selectable when Interface Type (IR) of the **Near-End** is **ETH/UTP** or **ETH/BNC**.

Note

*When setting **Rate** to 2304k, a confirmation message appears: "Setting all card modems to **Rate**=2304 kbps". Press ‹**OK**› to confirm.*
*If the Rate is changed from 2304 kbps to any other value, a confirmation message appears: "Setting all other card modems to ‹**Rate**›". Press ‹**OK**› to confirm.*

Configuring ASMi-52CD/CD4W/CQ-E1 Ports

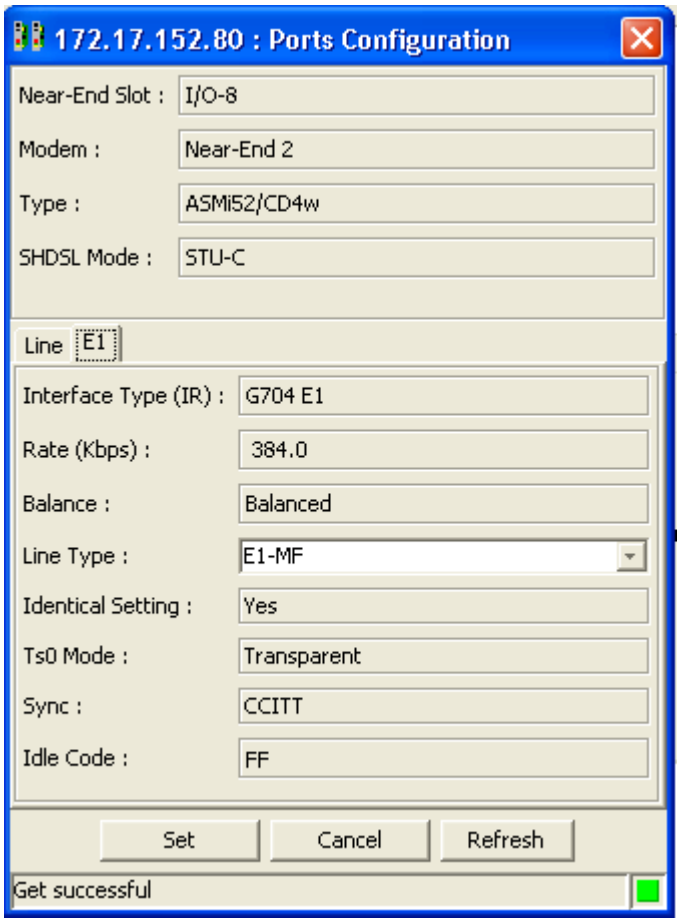


Figure 3-32. ASMi-52CD/CD4W/CQ Ports Configuration Dialog Box

Table 3-16. ASMi-52CD/CD4W/CQ Ports Configuration

Parameter	Possible Values / Remarks
Line	
Clock Source	**Internal, External, System, Receive**
SHDSL Transmission Mode	**Annex A, Annex B**
Far-end E1 Timeslot	**0...32**
Clock Source Modem	**Modem-1, Modem-2, Modem-3, Modem-4** Only for External
Low Speed	**No, Yes**
E1	
Interface Ttpe	**G704E1** (read-only)
Admin Status	**Enable, Disable**
Protocol	**Sync**
Rate (Kbps)	**64 x n (n = 1 to 32)**
Balance	**Balanced, Unbalanced**

Parameter	Possible Values / Remarks
Linr Type	**E1, E1-CRC, E1-MF, Unframed**
Identical Setting	**Yes, No**
Ts0 Mode	**NA, Looped, Transparent**
Sync	**62411, CCITT, Fast**
Idle Code	**0 to FF**
T1	
Interface Ttpe	**G704T1** (read-only)
Admin Status	**Enable, Disable**
Protocol	**Sync**
Rate (Kbps)	**64 x n (n = 1 to 24)**
Linr Type	**ESF, SF, Unframed**
Identical Setting	**Yes, No**
Sync	**62411, Fast**
Idle Code	**0 to FF**
Signaling Agent	**None, Robbed Bit**
Line Code	**B8ZS, AMI**
Rx Sensitivity	**Short Haul, Long Haul**
Line Interface	**CSU, DSU**
Line Length	**0-133, 134-266, 267-399, 400-533, 534-655**
Line Build Out	**7.5, 15, 22.5**
ETH	
Interface type	**ETH/UTP, ETH/Q, ETH/BNC, ETH/QN, ETH/QV**
Admin Status	**Enable, Disable**
Protocol	**Sync**
Rate (kbps)	Clock Source= **Internal** 2 wire: 64xN (For ASMi-52/CD4w/New, ASMi-52/CD4w/New Ethernet: N=1..36; ELSE: N=1..32, 36); 4 wire: 128xN (For ASMi-52/CD4w/New, ASMi-52/CD4w/New Ethernet: N=1..36; else: N=1..32, 36) Clock Source= **System** 2-wire: 64 x N (N=1..32); 4-wire 128 x N (N=1..16) Low Speed=Yes: 64xN (N=1..32)
Alarm Forwarding Enable	**Enable, Disable** For Interface Type (IR) = ETH/QN or ETH/QV
Ethernet Mode	**Half-duplex, Full-duplex** For Interface Type (IR) = ETH/BNC

Parameter	Possible Values / Remarks
Bridging Mode	**Filtering, Transparent** For Interface Type (IR) = ETH/BNC
Data	
Interface Type	**RS-530, X.21, V.35, IP/UTP, No IR**
Admin Status	**Enable, Disable**
Protocol	**Sync**
Rate (kbps)	Clock Source= **External** 2-wire: 64xN (N=1..36); 4 wire: 128xN (N=1..36) Clock Source= **Internal** 2 wire: 64xN (For ASMi-52/CD4w/New, ASMi-52/CD4w/New Ethernet: N=1..36; or: N=1..32, 36); 4 wire: 128xN (For ASMi-52/CD4w/New, ASMi-52/CD4w/New Ethernet: N=1..36; or: N=1..32, 36) Clock Source= **System** 2 wire: 64xN (N=1..32); 4 wire 128xN (N=1..16) Low Speed=Yes: 64xN (N=1..32)
RLB Enable	**Disable, Enable**
LLB Enable	**Disable, Enable**

Configuring FOMi-40C Ports

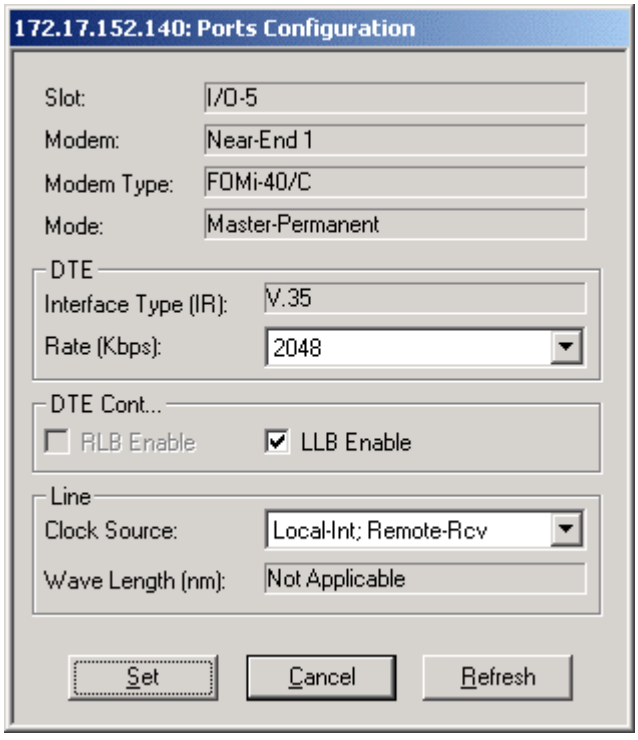


Figure 3-33. FOMi-40C Ports Configuration

Table 3-17. FOMi-40C Ports Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **X.21**, **G.703-E1**, **V.36**, **V.35**, **G.703** (64K), **ETH/UTP**, **G.703-T1**, **No IR** For CM-2 Software version 2 or greater the modem remote type is double. The following options also appear: **ETH/BNC** Read-only
Rate (Kbps)	**56**, **64**, **96**, **112**, **128**, **192**, **256**, **384**, **512**, **768**, **1024**, **1536**, **1544**, **2048** Disabled if modem1Type = **yes** and one of the following values is displayed in the Clock source field: Local-Ext-Auto; Remote-Rcv, Local-Rcv; Remote-Ext-Auto
DTE Cont...	
RLB Enable LLB Enable	**Disable**, **Enable** (when checked) **Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703-E1, G.703 (64k), G.703-T1, Ethernet, ETH/BNC, ETH/Q, IP/UTP
Line	
Clock Source	**Local-Int; Remote-Rcv;** **Local-Rcv; Remote-Int;** **Local-Ext-Auto; Remote-Rcv** N/A for Ethernet or ETH/BNC **Local-Rcv; Remote-Ext-Auto** N/A for Ethernet or ETH/BNC
Wave Length (nm)	**850, 1300, 1300LASER** Read-only

Configuring FOMi-E1/T1C, FOMi-E1/T1CD Ports

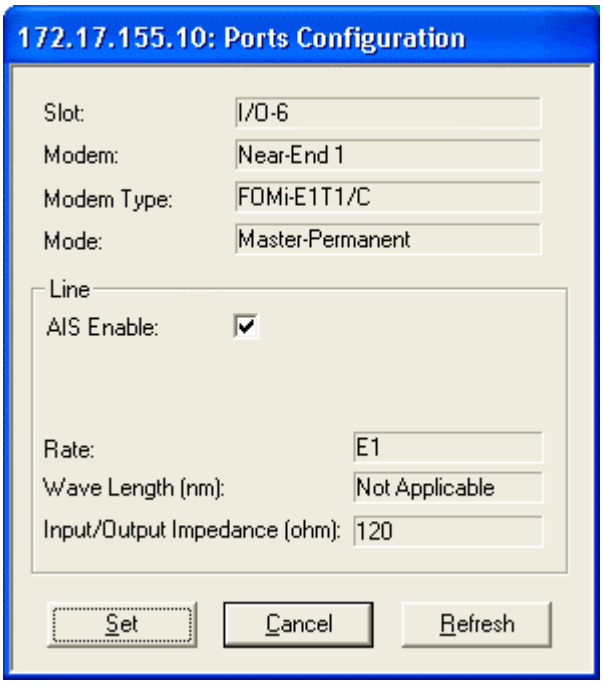


Figure 3-34. FOMi-E1/T1C Ports Configuration

Table 3-18. FOMi-E1/T1C Ports Configuration Parameters

Line	Possible Values / Remarks
AIS Enable	**Disable**, **Enable** (when checked)
Line Length (ft)	For FOMi=E1/T1CD where Rate=T1: **0–133, 134–266, 267–399, 400–533, 534–655**
Rate	**E1, T1**
Wave Length (nm)	**850, 1300, 1300LASER, Not Applicable**
Input/Output Impedance (ohm)	**75, 100, 120**

Configuring MTMi-20C Ports

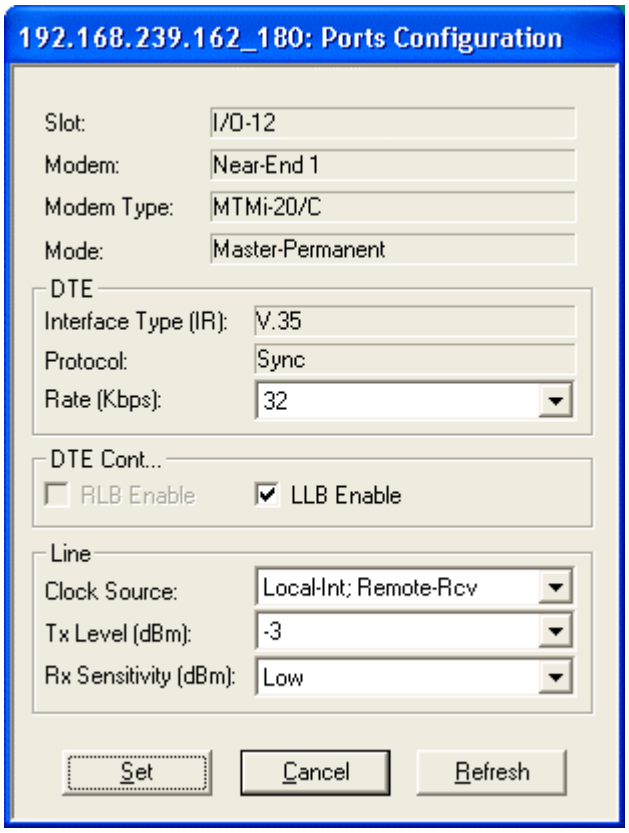


Figure 3-35. MTMi-20C Ports Configuration

Table 3-19. MTMi-20C Ports Configuration Parameters

Parameter	Possible Values / Remarks
DTE	
Interface Type (IR)	**V.24**, **RS-530**, **X.21**, **V.35**, **G.703** (64K), **ETH/UTP**, **ETH/BNC**. Read-only
Protocol	**Sync** Read-only
Rate (Kbps)	**32**, **64**, **128** Disabled if these values are displayed in Clock source field: **Local-Ext-Auto; Remote-Rev** or **Local-Rev; Remote-Ext-Auto**
DTE Cont...	The LOS field is disabled for SA modems
RLB Enable	**Disable**, **Enable** (when checked)
LLB Enable	**Disable**, **Enable** (when checked) Disabled if the interface type is X.21, G.703 (64k), ETH/UTP, or ETH/BNC
Line	
Clock Source	**Local-Int; Remote-Rcv** **Local-Rcv; Remote-Int** **Local-Ext-Auto; Remote-Rcv** (N/A with Ethernet or ETH/BNC) **Local-Rcv; Remote-Ext-Auto** (N/A with Ethernet or ETH/BNC)
Tx Level (dBm)	**–12**, **–9**, **–6**, **–3**, **0**
Rx Sensitivity (dBm)	**Low**, **High**

Viewing and Modifying SHDSL Line Parameters

You can view and modify the SHDSL line parameters for ASMi-52/CD/CD4w/CQ/SA only.

➤ **To view and modify SHDSL Line parameters**

1. In the Zoom view, select the Far-End modem, right-click and select **Configuration > SHDSL Line>Configuration**.

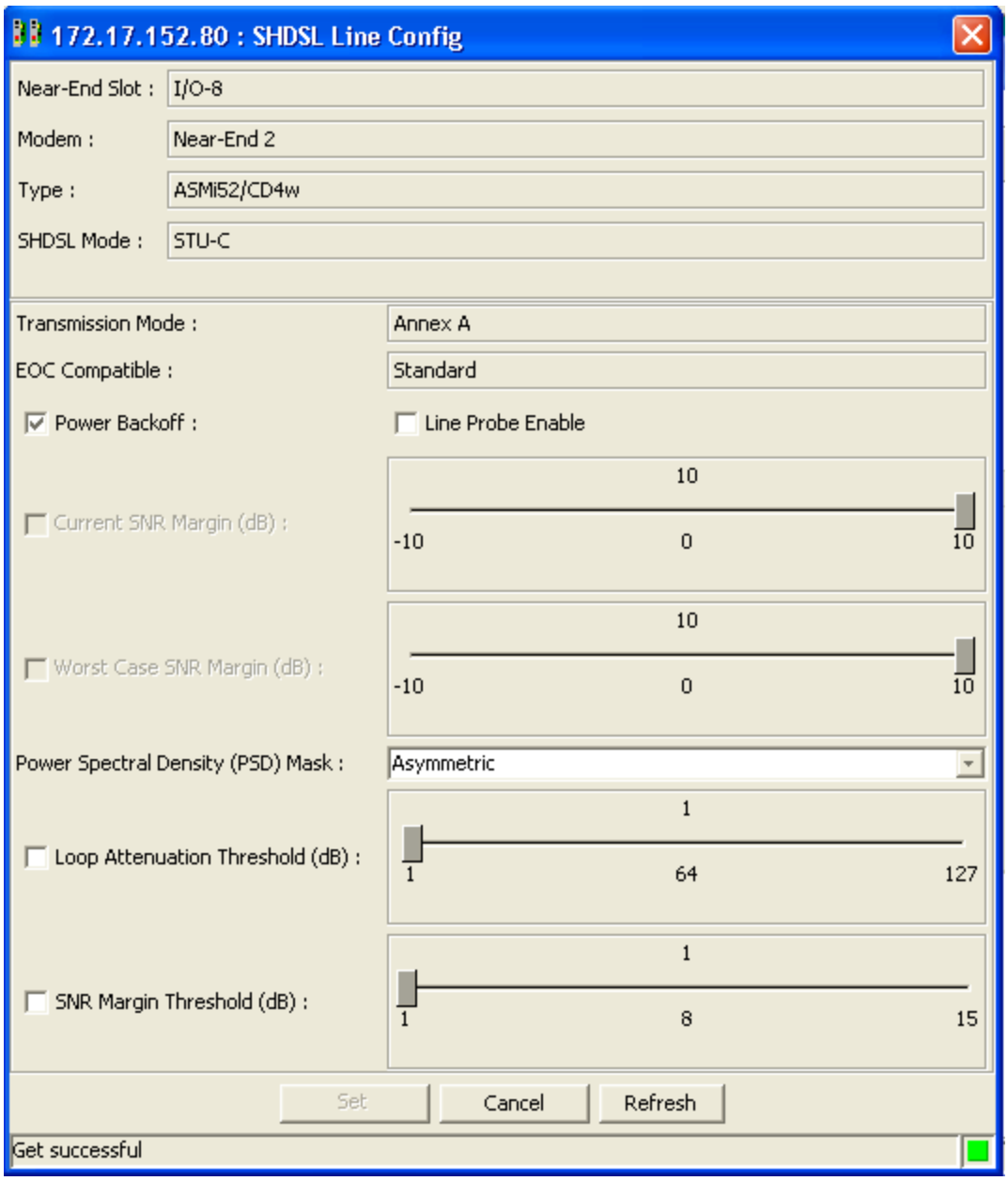


Figure 3-36. SHDSL Line Dialog Box

2. Fill in the fields, as described in *Table 3-20*.
3. Click ‹**Set**› to implement the changes.

Table 3-20. SHDSL Line Configuration Parameters

Parameters	Possible Values / Remarks
Near-End Slot	The name of the selected slot (**IO-1...IO-12**). Read-only
Modem	**Near-End (1/2/3/4)** or **Far-End (5/6/7/8),** according to selected modem. Read-only

Parameters	Possible Values / Remarks
Type	The modem type. **ASMi-52, ASMi-52CD, ASMi-52/CD4w, ASMi-52CQ** Read-only
SHDSL Mode	The SHDSL Mode, relevant for **ASMi-52, ASMi-52CD, ASMi-52CD/4w, ASMi-52CQ card** **STU-C or STU-R** Read-only
Transmission Mode	The Transmission mode. **Annex A, Annex B** Read-only (RW for Central Unit only)
EOC Compatible	**Proprietary, Standard** Read-only
Power Backoff	**Enable, Disable**
Line Probe Enable	Checked=Enabled Unchecked=Disabled Read-only for AMSi-52/CD4W device, STU-R device, DXC card.
Current SNR Margin (dB)	Disabled if Line Probe is unchecked This field contains a check box and Slider. Unchecked=disabled slider Checked=enabled slider Slider values: -10... +10
Worse Case SNR Margin (dB)	Disabled if Line Probe is unchecked. Unchecked=disabled slider Checked=enabled slider Slider values: -10... +10
Power Spectral Density (PSD) Mask	**Symmetric, Asymmetric**Read-write only for NE STU-C and when Line Probe is disabled When there is no communication with the far-end device, the actual PSD mask value is the same as configued in the SHDSL Line Configuration dialog box.
Loop Attenuation Threshold (dB)	Unchecked=0 Checked=enabled Slider Slider values: 1...127
SNR Margin Threshold (dB)	Unchecked=0 Checked=enabled Slider Slider values: 1...15

Viewing SHDSL Line Status

➤ To view SHDSL Line Status

1. In the Zoom view, select the Far-End modem, right-click and select **Configuration › SHDSL Line›Status**.

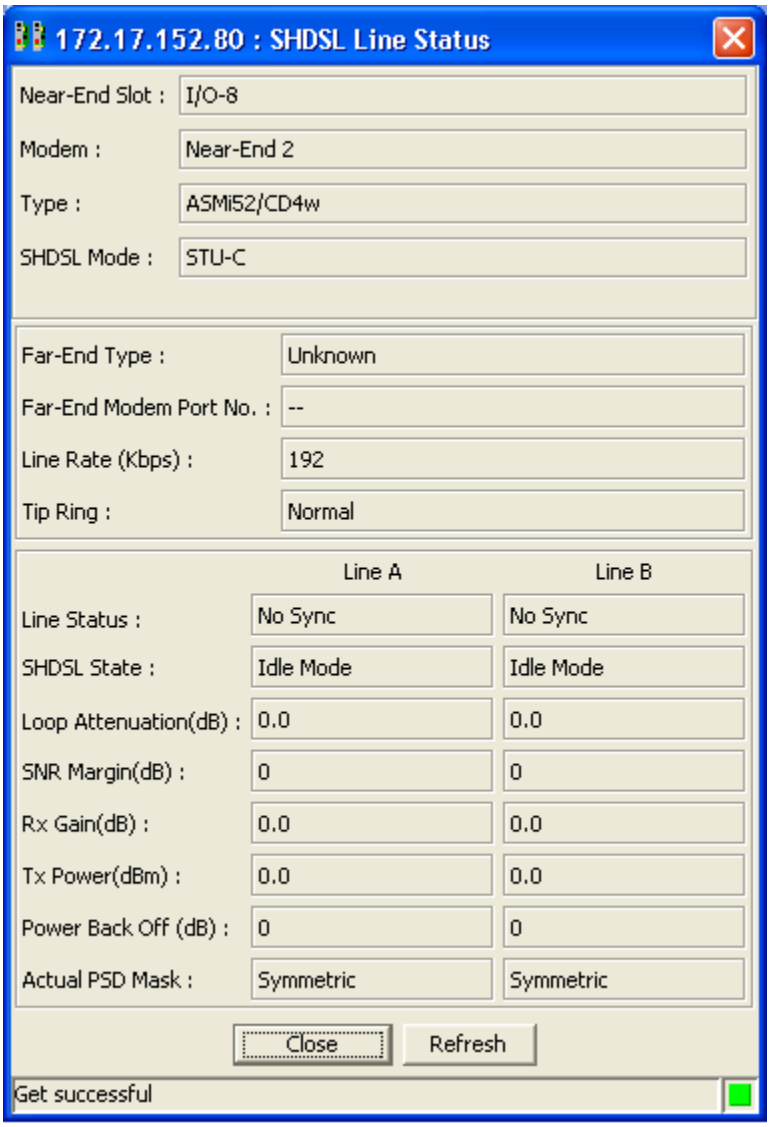

172.17.152.80 : SHDSL Line Status
Near-End Slot : I/O-8
Modem : Near-End 2
Type : ASMi52/CD4w
SHDSL Mode : STU-C
Far-End Type : Unknown
Far-End Modem Port No. : --
Line Rate (Kbps) : 192
Tip Ring : Normal
Line A
Line B
Line Status : No Sync No Sync
SHDSL State : Idle Mode Idle Mode
Loop Attenuation(dB) : 0.0 0.0
SNR Margin(dB) : 0 0
Rx Gain(dB) : 0.0 0.0
Tx Power(dBm) : 0.0 0.0
Power Back Off (dB) : 0 0
Actual PSD Mask : Symmetric Symmetric
Close
Refresh
Get successful

Figure 3-37. SHDSL Line Status Dialog Box

2. View the fields, as described in *Table 3-21*.
3. Click ‹**Close**› to close the dialog box.

Note *The Line B column exists only for modems with two lines (4-wire). If a 4-wire modem is configured for 2-wire, Line B is disabled.*

Table 3-21. SHDSL Line Status Parameters

Parameter	Possible Values / Remarks
Near-End Slot	The name of the selected slot (**IO-1...IO-12**). Read-only
Modem	**Near-End (1/2/3/4)** or **Far-End (5/6/7/8),** according to selected modem. Read-only
Type	The modem type. **ASMi-52, ASMi-52CD, ASMi-52CD/4w, ASMi-52CQ** Read-only
SHDSL Mode	The SHDSL Mode, relevant for **ASMi-52, ASMi-52CD, ASMi-52CD/4w, ASMi-52CQ card** **STU-C or STU-R** Read-only
Far-End Type	**FCD-IP= fcdIp(9), DXC= dxcCard4p(10) or dxcCard8p(11), LRS-52= lrs52(12), ASMi52/SA = sa(3), ASMi-52CD=double(5), ASMi-52CD4w= double4W(13), ASMi-52CQ=quad(7)** Read-only
Far-End Modem Port No.	The far-end modem number. If far end unit is: LRS double card: far end modem no. (1-2) LRS quad card: far end modem no. (1-4) DXC D8SL card: external port no.(1-8) LRS-52 modem rack: 1-24 Read-only
Line Rate (Kbps)	The line rate in kbps. MIB values are in bps. Divide by 1000 to display in Kbps (round to the nearest integer) Read-only
Tip Ring	**Normal, Reversed** Read-only
	When Wires per Link=4 (modemWire = w4wire), The following fields are displayed in two columns, the left column for Line A, and the right column for Line B. Each column has its respective title: LINE A, LINE B. (When Wires per Link=2, then only one column, without a title, is displayed.) Read-only

Parameter	Possible Values / Remarks
Line Status	No Sync, Sync Read-only
SHDSL State	Idle Mode, Data Mode, Boot Upload, Boot Upload Done, Startup Handshake in Progress, Startup Training in Progress, Framer Sync in Progress, Local Analog Loopback in Progress, Remote Core Loopback in Progress, Local Digital Loopback in Progress, Spectrum Test in Progress Read-only
Loop Attenuation (dB)	Range=(0-127) Read-only
SNR Margin (dB)	Range=(-10-+10) Read-only
Rx Gain (dB)	MIB value is in hundredth of dB. Divide by 100 and use display format: x.yz Read-only
Ts Power (dBm)	MIB value is in tenth of dBm. Divide by 10 and use display format: x.y (Range=up to 6500.0) Read-only
Power Back Off (dB)	The Power Backoff. 0-6 Read-only
Actual PSD Mask	The actual PSD mask Symmetric, Asymmetric Read-only When there is no communication with the far-end device, the actual PSD mask value is the same as configued in the SHDSL Line Configuration dialog box.

Assigning DTE (E1) Timeslots

RADview/TDM allows you to define which DTE (E1) Timeslots are transferred via the HDSL or SHDSL lines (for ASMi-51/CD/CQ/SA, or ASMi-52/CD/CD4w/CQ/SA modems).

➤ To view timeslot assignments:

- In the Zoom view, select the Near-End or Far-End modem, right-click and select Configuration > DTE (E1) TS Assignment.

Note

*If the Clock Source of the selected modem (*see *Viewing and Modifying Card Parameters in Chapter 3) is received, then the DTE (E1) TSA option is disabled.*

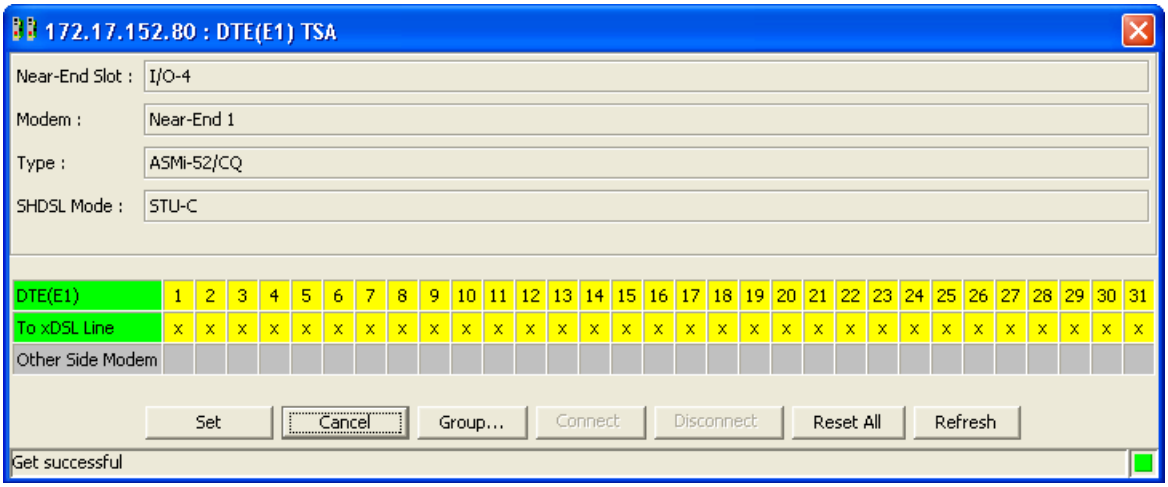

172.17.152.80 : DTE(E1) TSA
Near-End Slot : I/O-4
Modem : Near-End 1
Type : ASMi-52/CQ
SHDSL Mode : STU-C
DTE(E1) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
To xDSL Line x x x x x x x x x x x x x x x x x x x x x x x x x x x x x
Other Side Modem
Set
Cancel
Group...
Connect
Disconnect
Reset All
Refresh
Get successful

Figure 3-38. DTE (E1) Timeslots Assignment Table

Table 3-22. Timeslots Parameters

Parameter	Possible Values / Remarks
Near-end Slot	Slot (near or far-end) Read-only
Modem	Selected Modem Read-only
Type	Type of Modem Read-only
Modem Mode	Modem Clock-Mode Read-only
DTE (E1)	DTE (E1) parameters Read-only
To DSL Line	TS that is transferred to DSL Line Read-only
Other Side Modem	The alternate modem Read-only

Timeslot Color Coding

The Timeslots Assignment Table (see *Figure 3-38*) is color coded, as described in *Table 3-23*.

Table 3-23. TSA Color Coding

Cell	Color	Remarks
DTE (E1)	Green	At least one cell is connected
	Gray	Cell is available for connection
	Blue	Cell is not available for connection
Inside cells	Gray	Cell is available for connection
	Yellow	Cell is transferred to HDSL line
	Blue	Cell is not available for connection
Title Names	Gray	None of the cells has been selected to be transferred to the HDSL line
	Yellow	Some of the cells have been selected to be transferred to the HDSL line
	Green	All TSs are selected to be transferred to the HDSL line

Connecting Timeslots

➤ To connect a timeslot:

1. In the **Timeslots Assignment Table** (see *Figure 3-38*), select the desired cell and click ‹**Connect**›.
2. Click ‹**Set**›.

Disconnecting Timeslots

➤ To disconnect a timeslot:

1. In the **Timeslots Assignment Table** (see *Figure 3-38*), select the desired cell and click ‹**Disconnect**›.
2. Click ‹**Set**›.

Connecting a Group of Timeslots

You can assign a group of consecutive timeslots. This enables you to save the time otherwise required to assign each timeslot separately.

➤ To assign a group of timeslots

1. In the Timeslots Assignment Table, click ‹**Group**›.

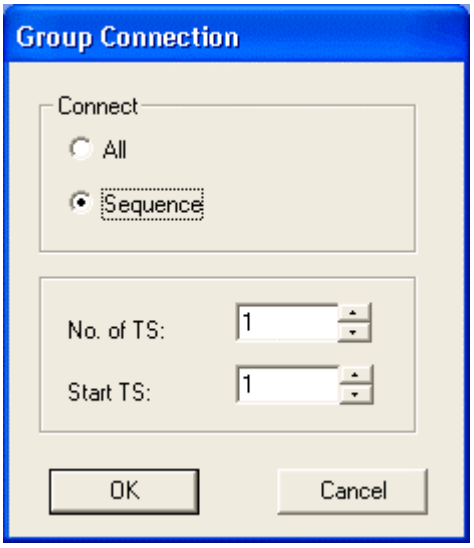


Figure 3-39. Group Connection Dialog Box

2. Fill in the fields, as described in *Table 3-24*.
3. Click ‹**Set**› to implement the changes.

Table 3-24. Group Connection Parameters

Parameter	Possible Values / Remarks
All	Connects All Timeslots
Sequence	Connects Sequence of Timeslots
No. of TS	Number of timeslots in the sequence **1..31** ***Note:*** *Relevant only when Sequence is selected*
Start TS	Starting TS **1..31** ***Note:*** *Relevant only when Sequence is selected*

Resetting All Timeslots

➤ **To reset all timeslots:**

1. In the Timeslots Assignment Table, click ‹**Reset All**›.

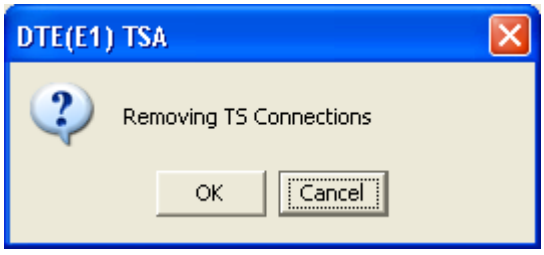


Figure 3-40. Remove Timeslot Connections Dialog Box

2. Click ‹**OK**› to confirm.

Note *After resetting the Timeslots Assignment Table, you must connect at least one timeslot.*

Viewing and Modifying User Information

In the Zoom view, you can view the user information related to the selected modem.

➤ **To view and modify user information:**

1. In the Zoom view, select the modem (near end or far end), right-click and select **Configuration** › **Modem User-Info**.

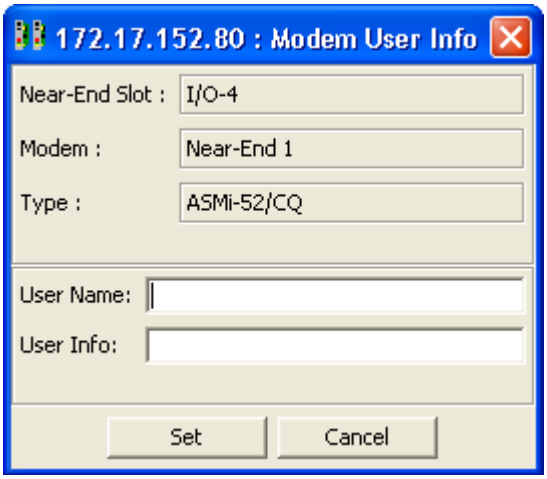


Figure 3-41. Modem User Info Dialog Box

2. Fill in the fields, as described in *Table 3-25.*
3. Click ‹**Set**› to implement the changes.

Table 3-25. Modem User Info Parameters

Parameter	Possible Values / Remarks
Slot	**I/O-1** to **I/O-12** Read-only
Modem	**Near-End** or **Far-End** Read-only: 1/2 for CD, 1/2/3/4 for CQ
Type	**ASMi-24/C**, **ASMi-31/C**, **ASMi-50/C**, **ASMi-50CD**, **FOMi-E1/T1C**, **FOMi-E1/T1CD**, **FOMi-40C**, **FOMi-40CD**, **MTMi-20C**, **ASM-40CD**, **ASMi-31CQ**, **ASMi-51CD**, **ASMi-51CQ**, **ASMi-52/CD**, **ASMi52-CD4w**, **ASMi-52/CQ** For CDs and CQs only, modem type and number displayed (for example, **ASM-40/CD–Modem 1**) Read-only
User Name	15 characters (Read/Write)
User Info	70 characters (Read/Write)

Resetting the Hardware

RADview/TDM enables you to reset the hardware for standalone LRS-24 modems only.

➤ **To reset the modem HW:**

1. In the Zoom view, select an ASMi-31CQ, ASMi-51CD/CQ or ASMi-52CD/CQ/CD4W modem (far-end).
2. Right-click and select **Configuration** › **HW Reset**.

Figure 3-42. Reset HW Confirmation Message Dialog Box

3. Select ‹**OK**›.

Resetting the Modem

The Reset command resets the modem to the last configuration that was saved.

Note

Reset is enabled only if the unit is Master. Reset cannot be performed while SW Download is in progress.

➤ **To reset the modem:**

1. In the Zoom view, select an ASMi-31CQ, ASMi-51CD/CQ or ASMi-52CD/CQ/CD4W modem (near-end or far- end).
2. Right-click and select **Configuration** › **Modem Reset**. If the unit is a standalone, select **HW Reset**.

Figure 3-43. Reset Modem Confirmation Message Dialog Box

3. Select ‹**OK**› to confirm the reset.

Chapter 4

Configuring a Typical Application

This chapter provides instructions for configuring LRS-24 for typical applications in which HDSL and SHDSL modem cards installed in the LRS-24 chassis operate opposite similar standalone devices.

Configuring HDSL/SHDSL applications includes the following tasks:

- Preliminary LRS-24 configuration
- Entering IP address of RADview management station
- Masking/unmasking remote traps
- Configuring SMOD (HTU-E1C and HTU-2) and IMOD (ASMi-52) cards via RADview
- Configuring the clock mode of SMOD/IMOD modem cards
- Configuring (xDSL) system/line parameters
- Configuring HTU-2 or E1 parameters
- Connecting the DTEs to the SMOD/IMOD modems.

4.1 HDSL Applications

Figure 4-1 illustrates a typical HDSL application, where an HTU-E1C card operates opposite a standalone HTU-2 modem.

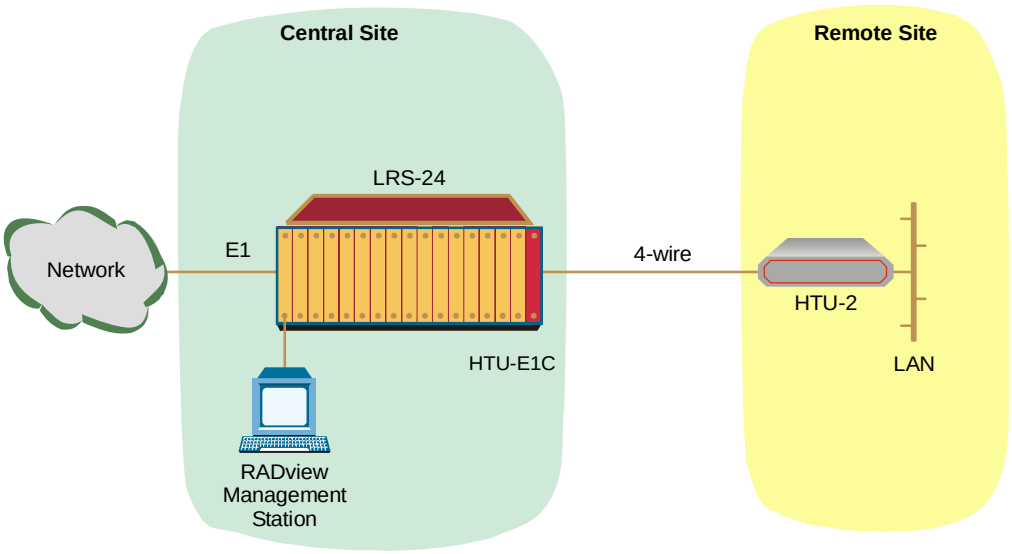


Figure 4-1. HDSL Application

HDSL Configuration

The recommended HDSL configuration procedure of the local and remote (SMOD) units includes the following steps:

1. 1. Performing preliminary configuration of LRS-24 via ASCII terminal (setting IP parameters), see page *4-2*
2. Configuring remote HTU-2, see page *4-3*
3. Configuring HTU-E1C and HTU-2 via RADview (see page *4-3*):
   - Entering IP address of the RADview management station
   - Masking/unmasking remote traps
   - Configuring system parameters of HTU-E1C
   - Configuring the clock mode of HTU-E1C
   - Assigning HTU-2 timeslots.
4. Connecting the DTEs to both modems, see page *4-8*.

Performing Preliminary LRS-24 Configuration

➤ **To perform preliminary LRS-24 configuration:**

1. Connect an ASCII terminal to the RS-232 port of LRS-24.
2. Assign an IP address to LRS-24.
3. Set read, trap and read/write communities to **public**.
4. Set the hub IP mode to **multiple**.
5. Reset LRS-24 by powering it off and back on again. Another option is to take out and re-insert the CM-2 card.

Configuring Remote HTU-2

➤ **To configure remote HTU-2:**

1. Disconnect the power cable and open the standalone unit.
2. Set jumper JP1 to **R** (remote) position, on the HTU-2 main board.
3. Set the DB_INT switch (located on the DIP switch) to **ON**.
4. Replace the cover and power on the unit.

Configuring HTU-E1C and HTU-2 via RADview

➤ **To configure HTU-E1C and HTU-2 via RADview:**

1. Start the RADview application.
2. Start the LRS-24 RADview agent by double clicking the LRS icon.

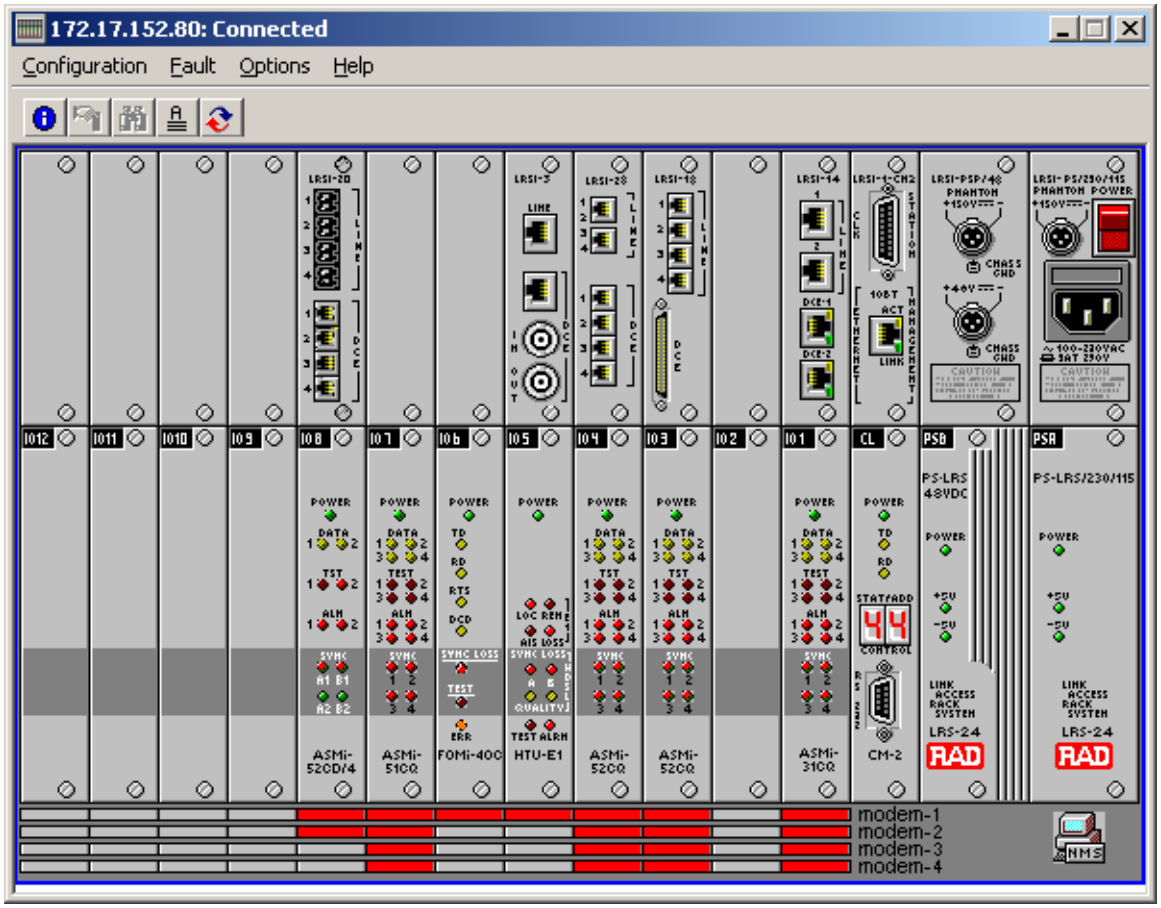


Figure 4-2. LRS-24 View Window

Entering IP Address of the RADview Management Station

➤ **To enter the IP address of the RADview management station:**

1. In the LRS-24 View window (*Figure 4-2*), click on an empty slot in the LRS-24 hub, and select **Options › Managers List**.

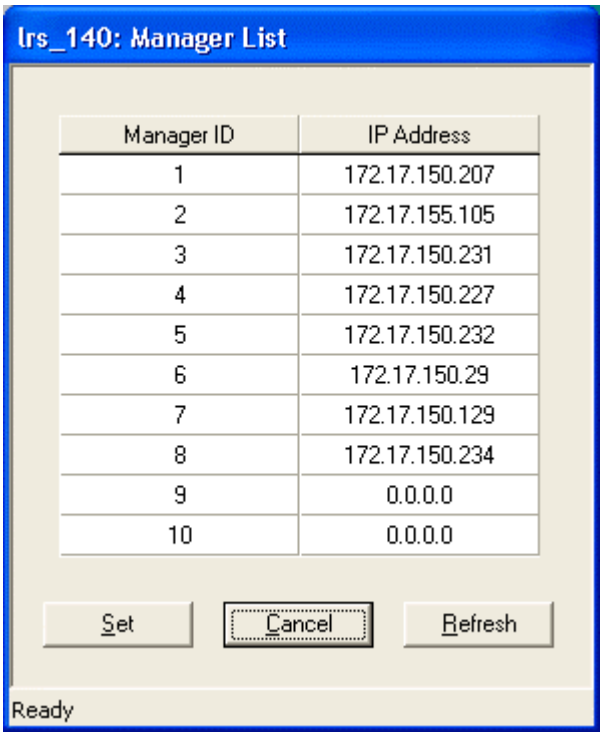


Figure 4-3. Managers List Dialog Box

2. Enter an IP address of your network management station.
3. Click ‹**Set**› to implement the changes.

Masking/Unmasking Remote Traps

➤ **To mask/unmask remote traps:**

1. In the LRS-24 View window, select **Configuration › Installation Update**.

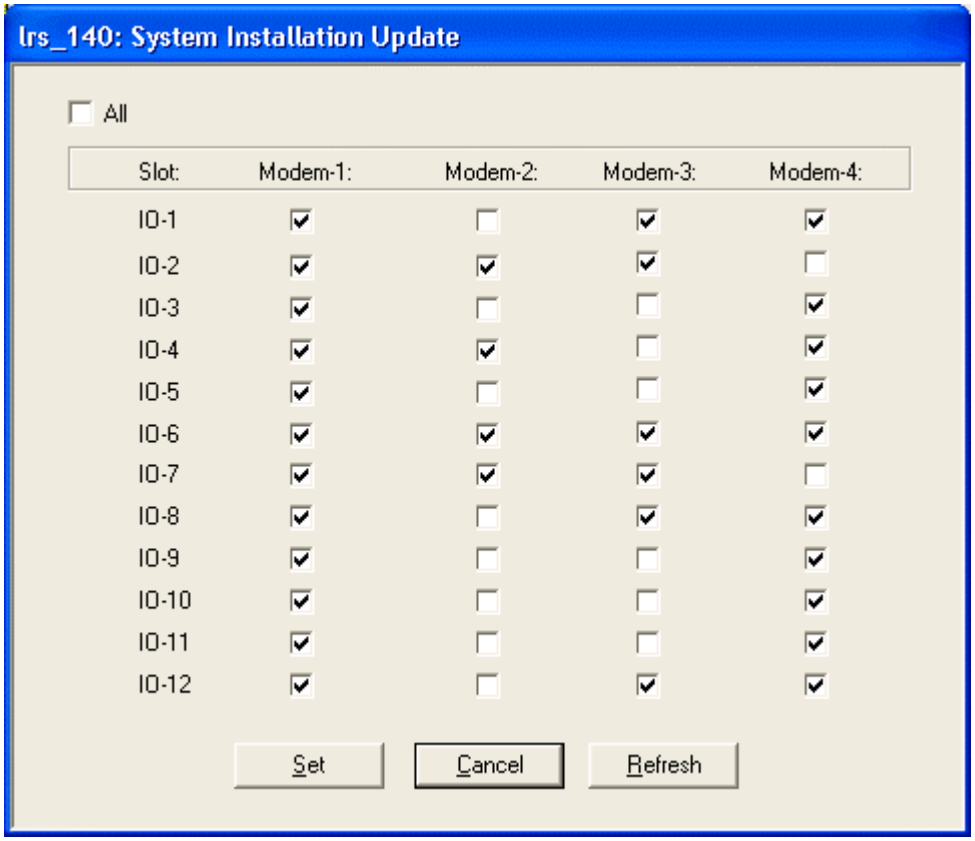


Figure 4-4. System Installation Update Dialog Box

2. Select the Modem-1 check box for IO-2 to make sure that the HTU-E1C receives the traps from the remote modem.
3. Click ‹**Set**› to implement the changes.

Configuring HTU-E1C System Parameters

➤ **To configure HTU-E1C system parameters:**

1. Connect the HTU-E1C card installed in slot 2 of LRS-24 to the remote HTU-2 with a straight cable. Wait 60 seconds for the modems to synchronize.
2. Verify that on both modems HDSL LINE A and HDSL LINE B SYNC LOSS LEDs are OFF.
3. Verify that the Status bar for Modem-1 at the bottom of the HTU-E1C card turns green.
4. In the LRS-24 View window, double click the HTU-E1C card installed in slot 2.

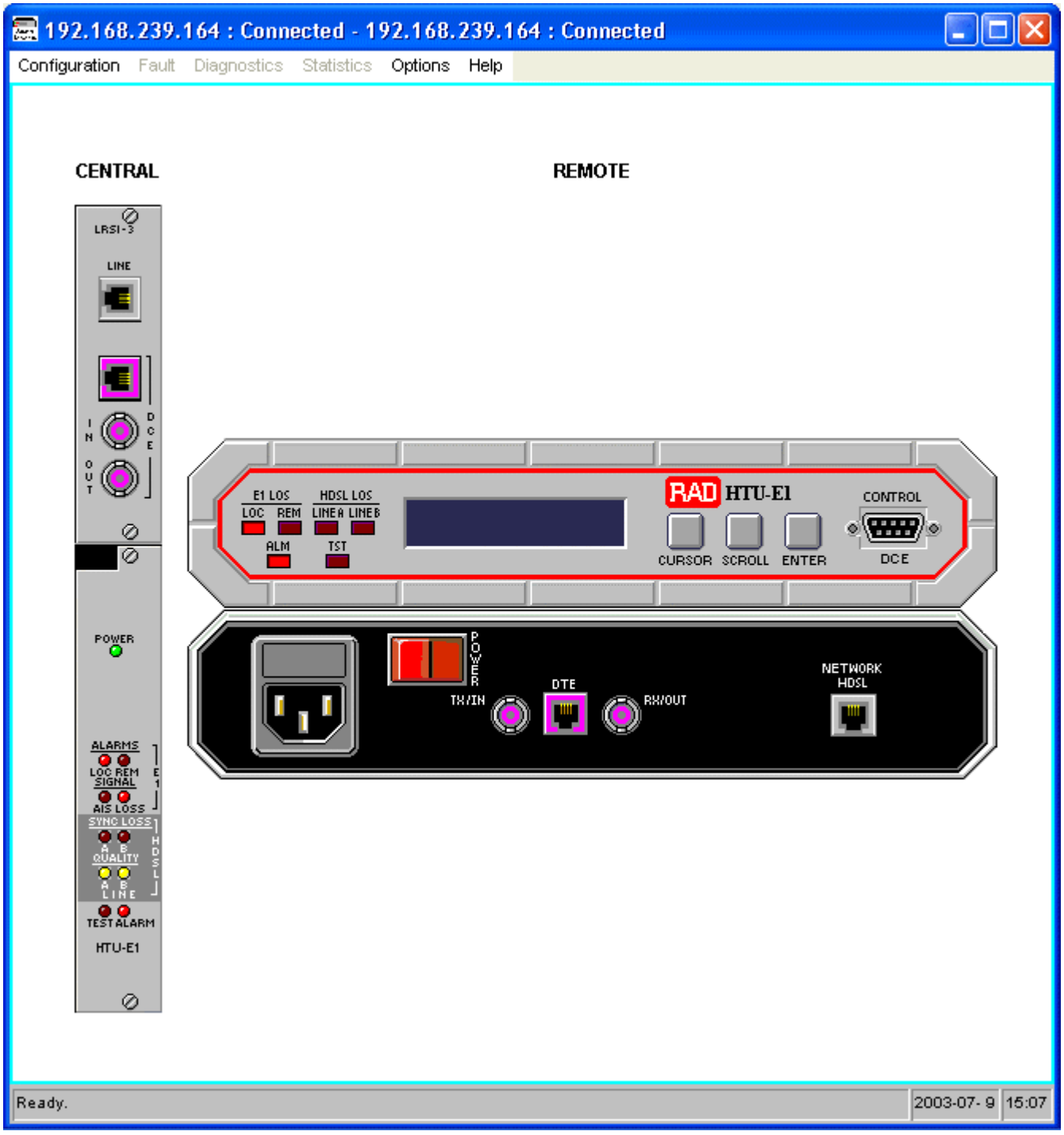


Figure 4-5. HTU-E1C Zoom View

5. In the HTU-E1C Zoom view, click on an empty area, right click and select **Configuration > System information**.

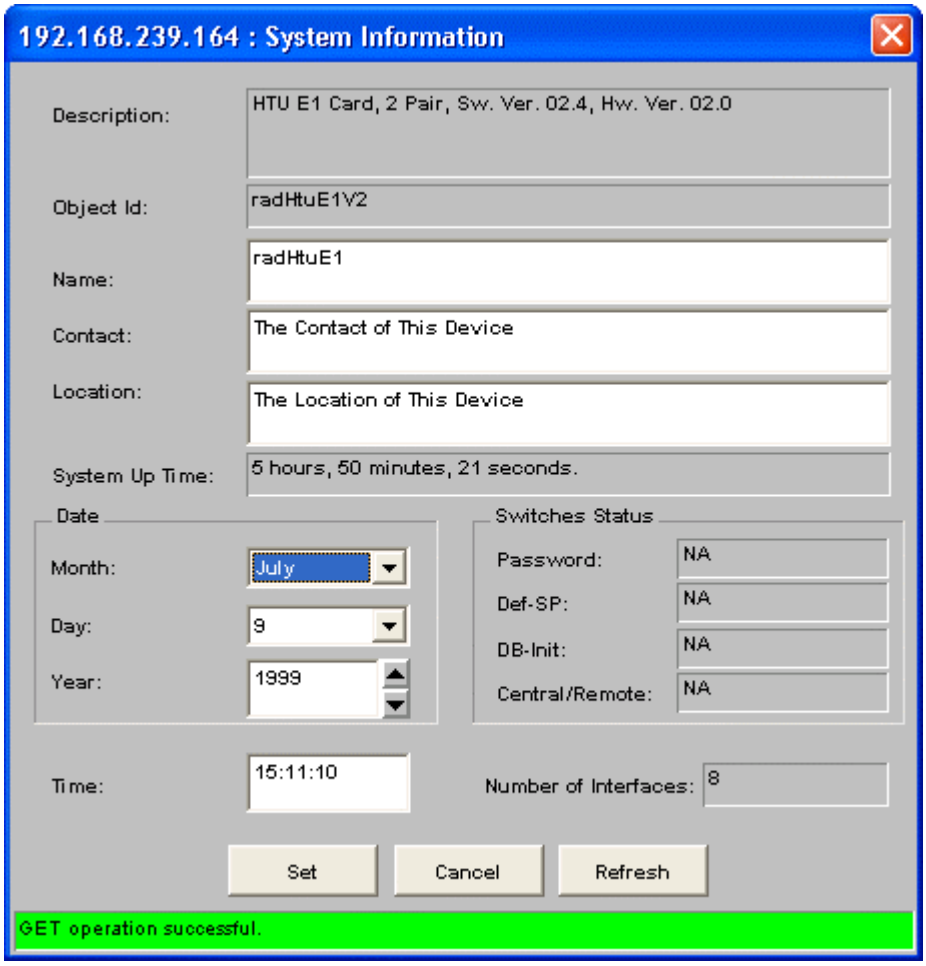


Figure 4-6. System Information Dialog Box

6. Fill in the Name, Contact and Location fields
7. Click ‹**Set**› to implement the changes.

Configuring the Clock Mode of HTU-E1C

➤ **To configure the clock mode of HTU-E1C:**

1. In the HTU-E1C Zoom window, click the HTU-E1C card.

   A blue border outlines the selected HTU-E1C card.

2. Select **Configuration › Parameters**.

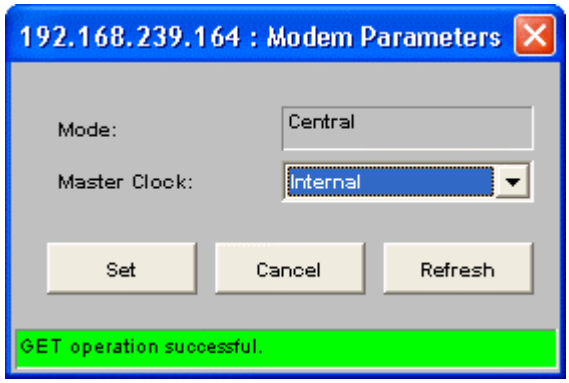


Figure 4-7. Modem Parameters Dialog Box

3. In the Master Clock field, from the drop-down list, choose **Internal.**
4. Click **Set** to implement the changes.

Assigning HTU-2 Timeslots

RADview-PC allows you to define which DTE (E1) Timeslots are transferred via the HDSL lines.

➤ **To assign HTU-2 timeslots:**

1. In the HTU-E1C Zoom view, click on the HTU-2 standalone modem.

   A blue border outlines the selected HTU-2 standalone modem.
2. Right click and select Configuration › TS Assignment.

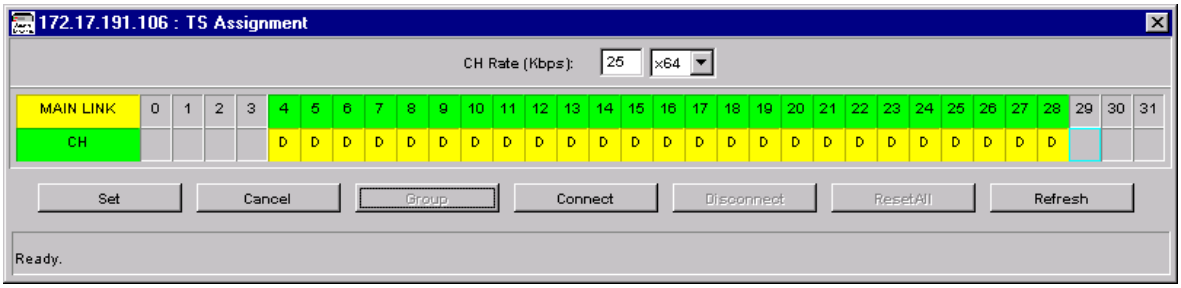


Figure 4-8. DTE (E1) TS Assignment Dialog Box

3. Assign timeslots 4 to 28.
4. Click **Set** to implement the changes.

Connecting the DTEs to HTU-E1C and HTU-2 Modems

➤ **To connect the DTEs to HTU-E1C and HTU-2 modems:**

- Connect DTEs to the appropriate ports of the local and remote modems.

4.2 SHDSL Applications

Figure 4-1 illustrates a typical SHDSL application, where a 4-wire ASMi-52CD card operates opposite two standalone ASMi-52 modems.

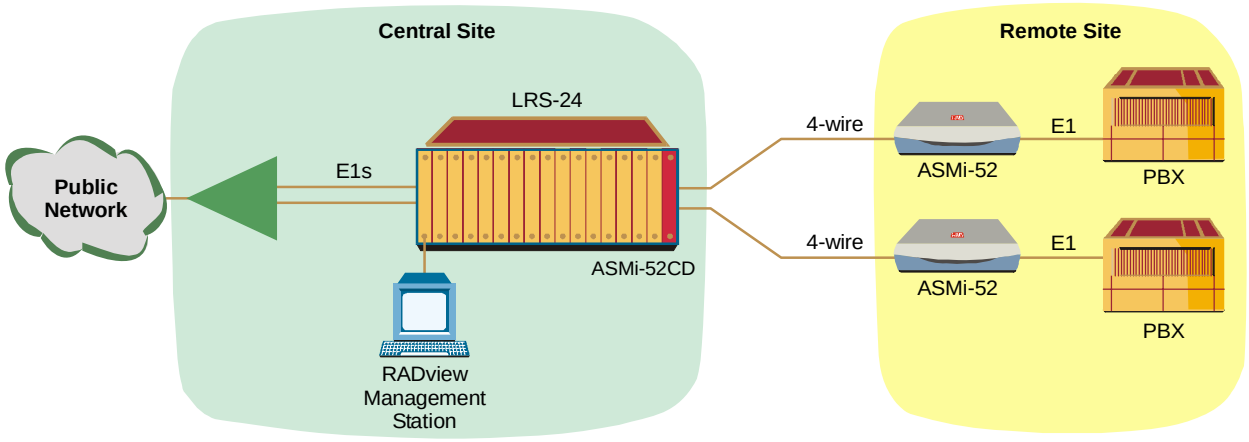


Figure 4-9. SHDSL Application

SHDSL Configuration

The recommended SHDSL configuration procedure of the local and remote units include the following steps:

1. Performing preliminary configuration (IP parameters) of LRS-24 via ASCII terminal (see page *4-2*)
2. Configuring ASMi-52CD and ASMi-52 via RADview:
   - Entering IP address of the RADview management station (see page *4-4)*
   - Masking/unmasking remote traps (see page *4-4)*
   - Configuring the clock mode of ASMi-52CD (see page *4-10*)
   - Configuring SHDSL line parameters (see page *4-10*)
   - Configuring E1 parameters (see page *4-13*).
3. Connecting the DTEs to the modems.

Configuring the Clock Mode of ASMi-52CD

➤ **To configure the clock mode:**

1. In the LRS-24 View window, select the ASMi-52CD card.

   A blue border outlines the selected card.

2. Right click and select **Configuration > Card Parameters**.

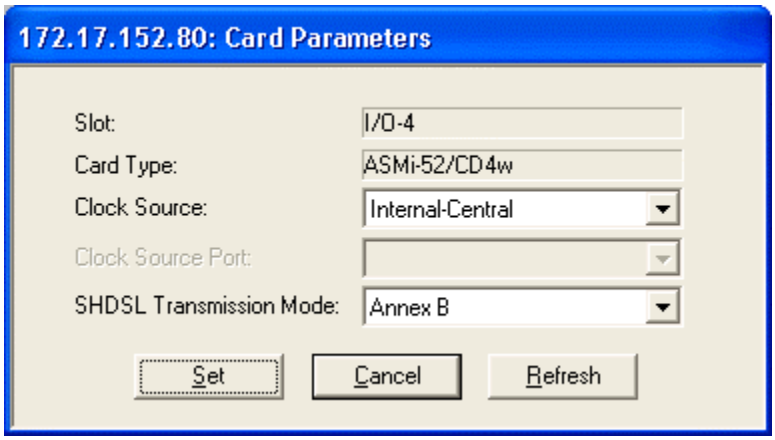


Figure 4-10. Card Parameters Dialog Box

3. In the Clock Source field, choose an option from the drop-down list (**Internal-Central, External-Central, System-Central,** or **Receive-Remote**). *Note for **ASMi52** family, **External** is selectable for **DTE=E1** only.*
4. In the Clock Source Port field, from the drop-down list, choose any of the modems listed (. This field is enabled only if the value displayed in the "Clock Source" field above is one of the following: External, Local-External, Remote-Receive, Receive. For ASMi-52CD cards, this field is enabled for DTE=E1 only.
5. In the SHDSL Transmission Mode, choose an option from the drop-down list (**Annex A** or **Annex B**). This field is available for ASMi-52CD cards, and is enabled for the Central Unit (where the modem port line Clock Source is Receive only).
6. Click <**Set**> to implement the changes.

Configuring SHDSL Line Parameters

➤ **To configure SHDSL Line Parameters:**

1. In the LRS-24 View window, double click on the relevant ASMi-52CD card.
2. Select a modem by clicking its radio button.

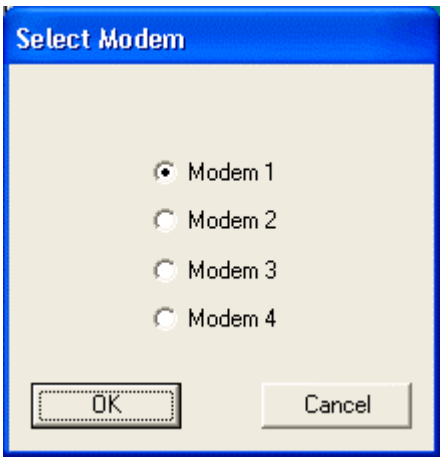


Figure 4-11. Select Modem Dialog Box

3. Click ‹**OK**›.

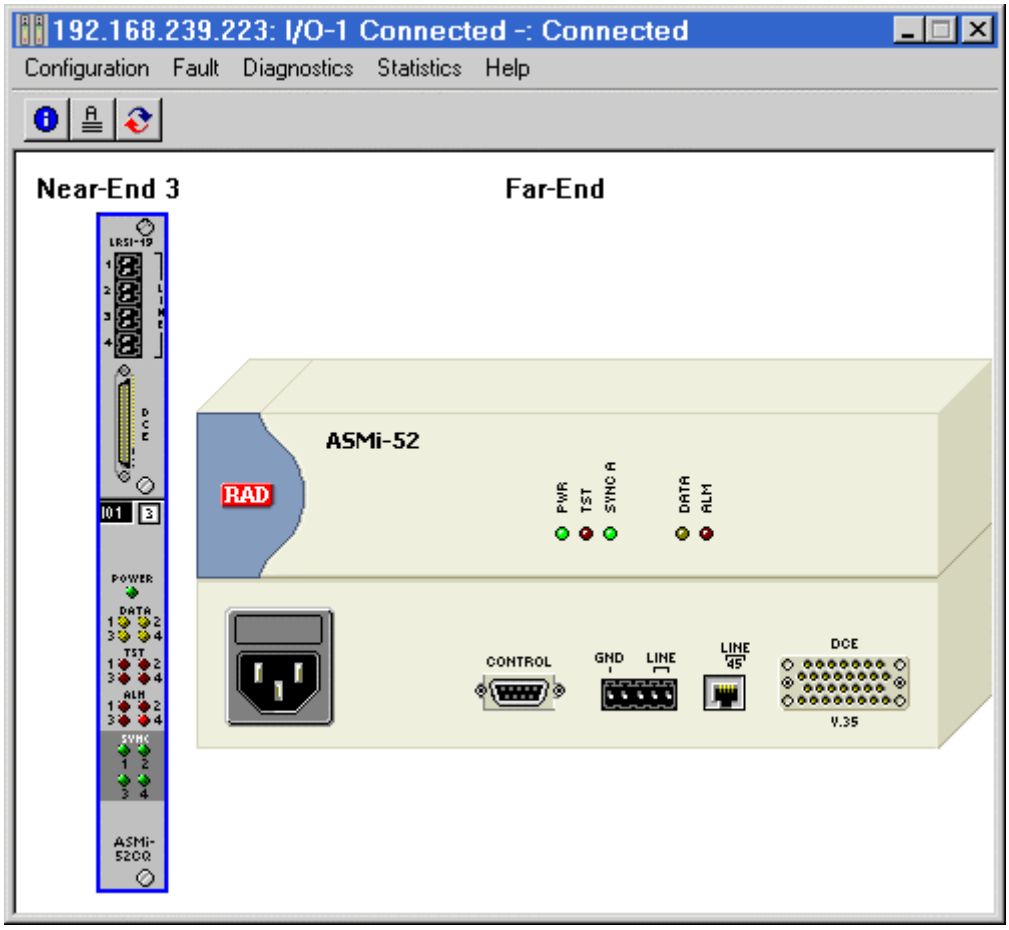


Figure 4-12. Zoom View of the Selected Modem/Card

4. In the Zoom view, select the Far-End modem.

   A blue border outlines the selected modem.

5. Right click and select **Configuration › SHDSL Line › Configuration**.

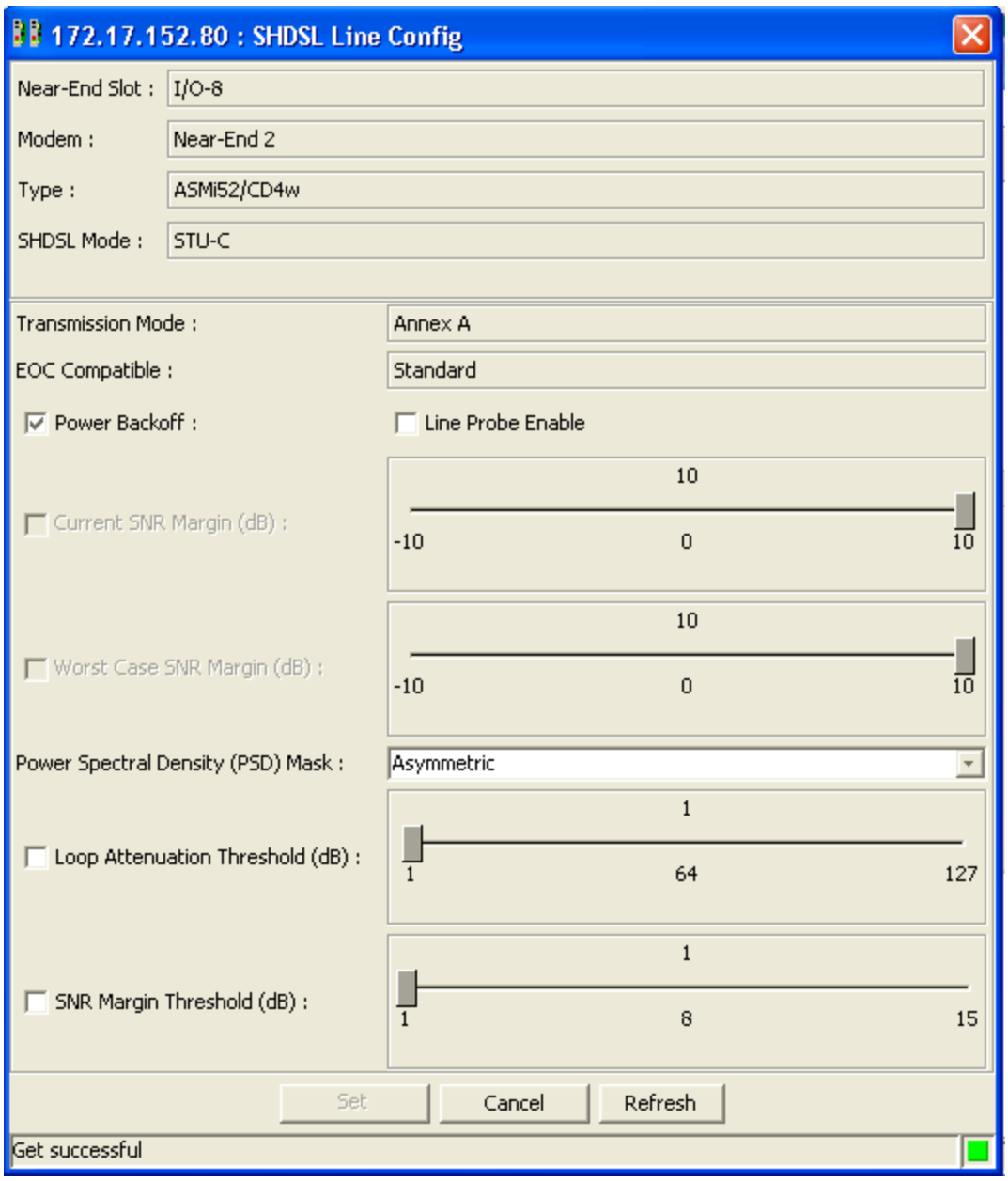


Figure 4-13. SHDSL Line Dialog Box

6. Configure the SHDSL parameters to the desired values.
7. Click <**Set**> to implement the changes.

Viewing SHDSL Line Status

➤ **To view SHDSL Line Status**

1. In the Zoom view, select the near-end modem, right click and select **Configuration > SHDSL Line>Status**.

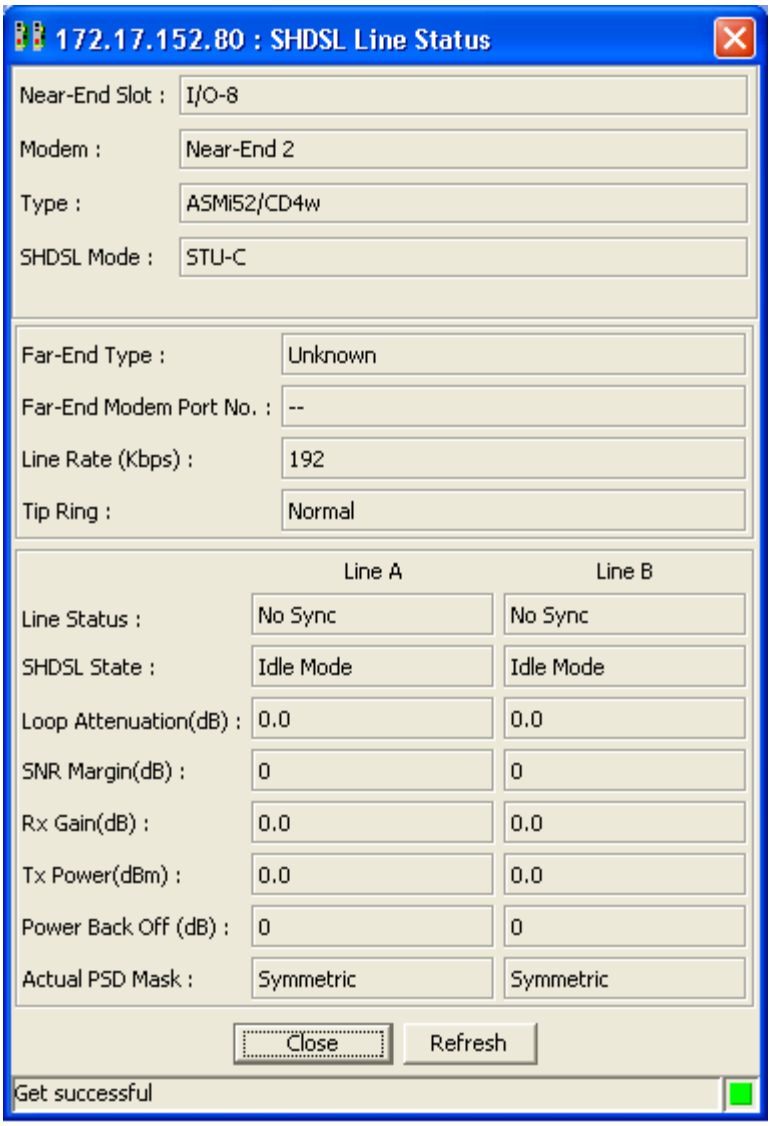

172.17.152.80 : SHDSL Line Status
Near-End Slot : I/O-8
Modem : Near-End 2
Type : ASMi52/CD4w
SHDSL Mode : STU-C
Far-End Type : Unknown
Far-End Modem Port No. : --
Line Rate (Kbps) : 192
Tip Ring : Normal
Line A
Line B
Line Status : No Sync No Sync
SHDSL State : Idle Mode Idle Mode
Loop Attenuation(dB) : 0.0 0.0
SNR Margin(dB) : 0 0
Rx Gain(dB) : 0.0 0.0
Tx Power(dBm) : 0.0 0.0
Power Back Off (dB) : 0 0
Actual PSD Mask : Symmetric Symmetric
Close
Refresh
Get successful

Figure 4-14. SHDSL Line Status Dialog Box

2. Click <**Done**> to close the dialog box.

Configuring E1 Parameters

RADview-PC allows you to define which DTE (E1) timeslots are transferred via the SHDSL lines.

➤ **To view timeslot assignments:**

1. In the Zoom view, select the Far-End modem, right click and select **Configuration > DTE (E1) TS Assignment.**

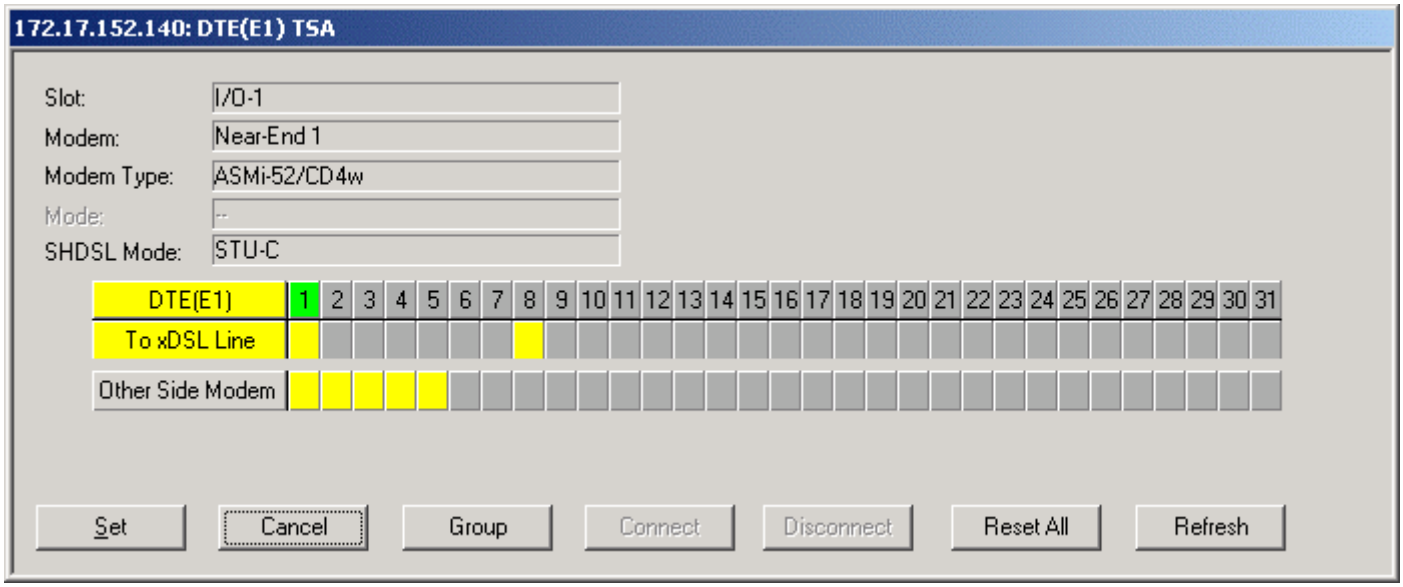


Figure 4-15. DTE (E1) Timeslots Assignment Table

2. Assign timeslots 1 to 31.
3. Click **Set** to implement the changes.

Connecting the DTEs to the ASMi-52CD and ASMi-52 Modems

➤ **To connect the DTEs to the modems:**

- Connect DTEs to the appropriate ports of the local and remote modems.

Chapter 5

Performance Management

This chapter discusses how RADview monitors the performance of the LRS-24 system and modems.

Performance monitoring includes the following tasks:

- System performance monitoring
  - Polling the agent, manual polling
  - Periodic polling
- Modem performance monitoring
  - Viewing and running modem diagnostics tests
  - Viewing interval, line, and interface performance statistics
  - Resetting statistics.

5.1 Monitoring System Performance (Diagnostics)

RADview/TDM LRS-24 enables you to perform system diagnostics including:

- Polling the agent
- Manual polling
- Setting periodic polling.

Polling the Agent

Polling the agent updates the card status. You can execute either manual or automatic polling of the LRS-24 system.

Polling Manually

You can execute manual (immediate) polling using the Poll Agent command, which immediately triggers an agent to update the card status.

Note that if you have selected to perform periodic polling of the agent (see *Setting Automatic Periodic Polling*), the (manual) Poll Agent command is disabled.

➤ To manually poll and update the card status:

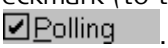
- In the LRS-24 View window, from the **Configuration** menu, select **Poll Agent**.

  The card status is updated immediately.

Setting Automatic Periodic Polling

You can set automatic periodic polling.

➤ **To toggle LRS-24 Polling:**

1. In the LRS-24 View window, select the system by clicking inside the LRS-24 hub without selecting a device. Ensure that no border surrounds any of the modem cards.
2. Right click and select **Options › Polling**. A checkmark (to the left of the Polling entry) indicates that (periodic) polling is On  .
3. Select or clear the Polling check box, to toggle periodic polling (On or Off).

Note

When Polling is On, the NMS polls the LRS-24 agent every 60 seconds. When Polling is Off, polling is not automated. To initiate polling, you can do any of the above steps (such as selecting the abovementioned Polling check box or click the Polling button *).*

5.2 Monitoring Modem Performance

RADview/TDM enables you to monitor modem performance in the Zoom view including:

- Viewing and running modem diagnostics tests
- Viewing statistics
  - Viewing interval (HDSL) statistics
  - Viewing line statistics
  - Viewing DTE (1) statistics
  - Viewing performance statistics
- Resetting statistics.

Running and Viewing Diagnostics Tests

The Diagnostics menu enables you to evaluate and monitor LRS-24 data transfer performance. RADview's diagnostic functions enable you to:

- Display the current tests being run on the selected modem
- Stop the current tests being run on the selected modem
- Initiate a new test to be run on the selected modem
- Set the polling interval on the modem (BERT tests only).

➤ **To view/run tests on a modem:**

1. In the Zoom view, select the modem (near end or far end), right click and select **Diagnostics** › **Test.**

   The DTE1 Testing dialog box displays the current tests running on the modem. For descriptions of the fields, see *Table 5-1*.

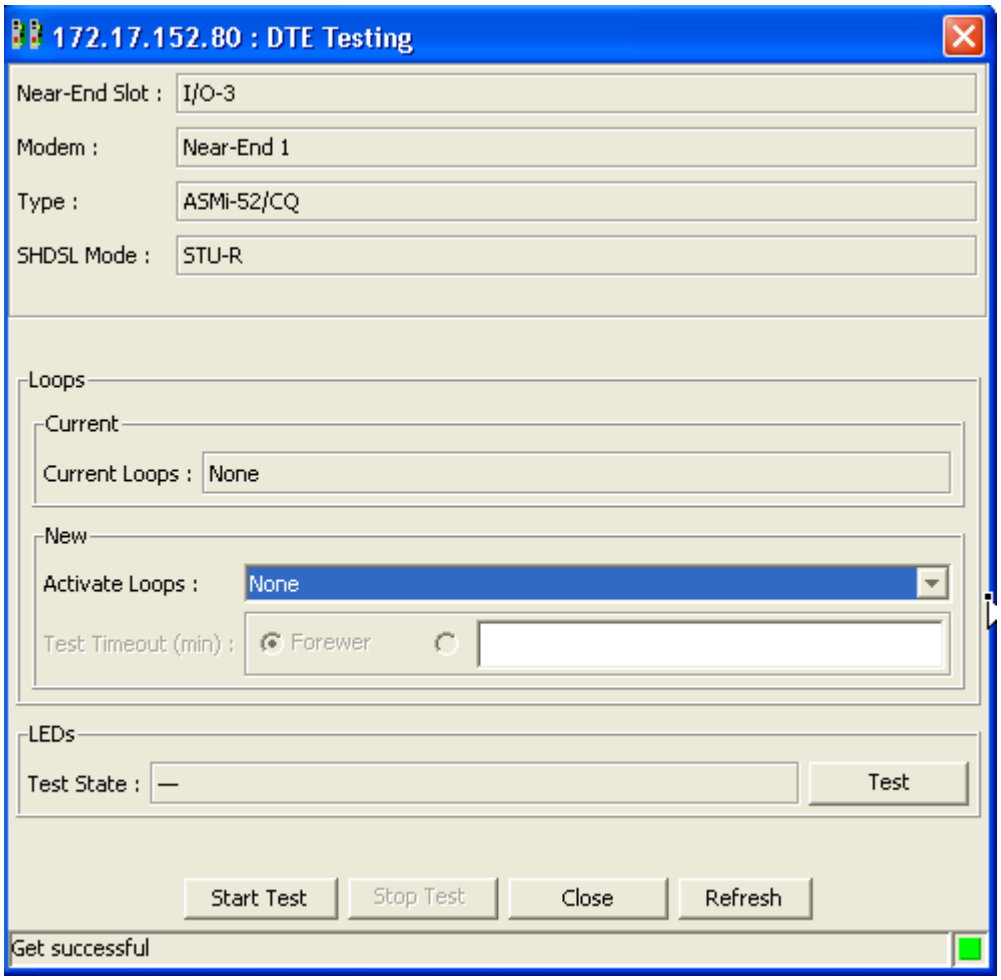


Figure 5-1. DTE1 Testing Dialog Box

2. If the Interface Type is IR (ETH/UTP, ETH/BNC, IP/UTP, ETH/Q) a confirmation message appears "Activating Loops may cause wrong information in the routing tables".
3. Press ‹**OK**› to confirm.
4. To run a new test on the modem, in the **Activate Loops** field, from the drop-down list, choose the desired test, and click ‹**Apply**› (adjacent to the **Active Loops** field).
5. To stop all tests running on the modem, in the Loops area, click ‹**Stop**› (adjacent to the **Current Loops** field).
6. To set the polling interval on the modem, click ‹**Polling**› (available only if the test being run is **BERT,** as shown in the **Current Loops** field, shown in the figure above).

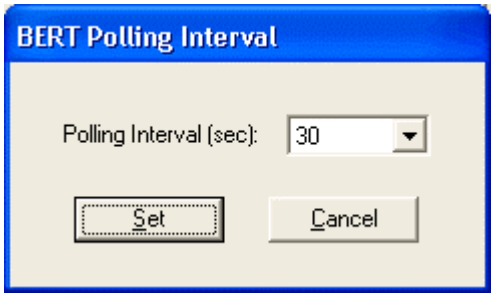


Figure 5-2. Polling Interval Dialog Box

7. In the BERT Polling Interval dialog box, click the drop-down arrow to select the desired polling interval. Possible values for polling interval are **10, 30, 60 seconds**. The default value is **30** seconds.
8. Click ‹**Set**› to implement the changes.

   The BERT Polling Interval dialog box closes.
9. Click ‹**Close**› to close the DTE1 Testing dialog box.

Note

*The **Refresh** option is not available for the following tests: **ANA+BERT**, **REM+BERT** and **BERT**.*
When you close the Test Dialog Box the polling interval returns to the default value (30).

Table 5-1. DTE1 Testing Parameters

Parameters	Possible Values / Remarks
Near-End Slot	**I/O-1** to **I/O-12** Read-only
Modem	**Near-End** or **Far-End** 1/2 for CD, 1/2/3/4 for CQ Read-only
Type	Modem Type **ASMi-24/C**, **ASMi-31/C**, **ASM-40/CD**, **ASMi-50/C**, **ASMi-50/CD**, **FOMi-E1/T1**, **FOMi-E1/T1/CD**, **FOMi-40**, **FOMi-40/CD**, **MTMi-20C**, **ASMi-31CQ**, **ASMi-51CD**, **ASMi-51CQ**, **ASMi-52 CD/CD4w/CQ** For CDs and CQs only, modem type and number displayed (for example, **ASM-40/CD–Modem 1**) Read-only
Mode	Modem mode **Master-Permanent**, **Master-Temporary**, **Slave-Permanent**, **Slave-Temporary** Read-only
SHDSL Mode	Available for ASMi-52 family only. **STU-C**, **STU-R** (for Modem Port Line Clock Source) Read-only

Parameters	Possible Values / Remarks
Current Loops	**None**, **ANA**, **REM**, **ANA + BERT**, **REM + BERT**, **BERT**
BERT Result	**None**, **Odd**, **Even** Enabled only when ANA+BERT, REM+BERT or BERT test is running on the modem Read-only
Remote Digital Test Status	**On**, **Off** A solid line in this field indicates **On**. No line indicates **Off**. Read-only
Activate Loops	**None**, **LLB, RLB, LLB+BERT, RLB+BERT, BERT, CLB, CLB+BERT** **ANA+BERT** is **not** an option for **FOMi-E1/T1C** or **FOMi-E1/T1CD**. **Digital** option applicable only to **ASM-40CD.** **RLB (REM)** and **RLB (REM)+BERT** will be disabled for: • A far-end modem that is not connected and or is unmanaged • A near-end modem that is not connected or is unmanaged. (NMS checks the following condition: if modemMngLink=off(2)), except for the following modems:- **ASMi-31** SW with version< 100 (0.xx)and **ASM-40 CD**) Read-only ***Note:*** *For ASMi-52 family, BERT test is disabled.*
Test Timeout (min)	*Enabled only for ASMi-51CD/CQ/SA and ASMi-52CD/CQ/CD4W* For ASMi-51CD/CQ/SA: **5, 10, 20, 30, 60, 90, 120, Forever** For ASMi-52CD/CQ/CD4W: **1...4095** **Forever** (checkbox)
Enable Remote Digital Test	**On**, **Off** ASM-40 only Read-only
LEDs Test State	**On**, **Off** Disabled for: • FOMi-40 and FOMi-E1/T1modems when a loop is running • When the near-end modem mode is set to **Slave** Read-only

Viewing BERT Counters

Note *This is applicable for ASMi-51CD/CQ and ASMi-52CD/CQ/CD4W only.*

➤ To view/poll BERT counters:

1. In the Zoom view, select the modem (near end or far end), right click and select **Diagnostics** › **BERT Counters**.

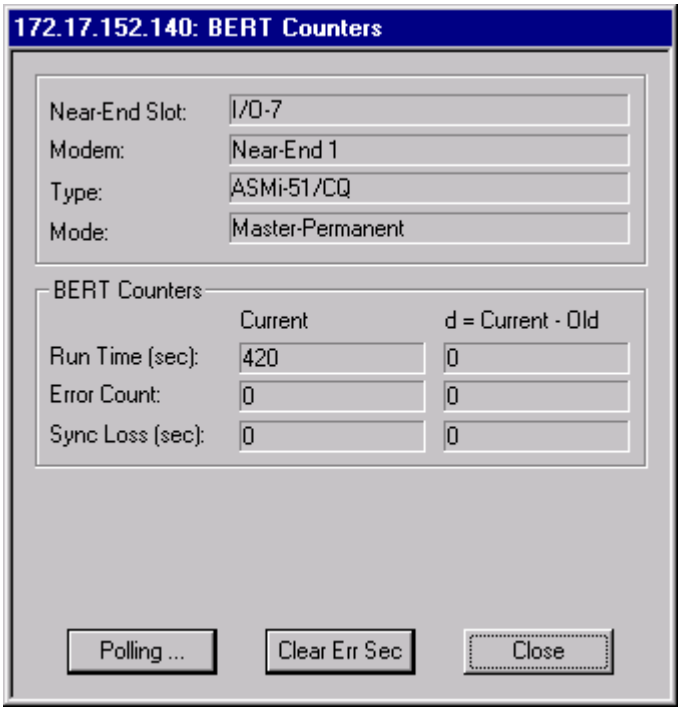


Figure 5-3. BERT Counters Dialog Box

2. To set the Polling interval, click‹**Polling**›.

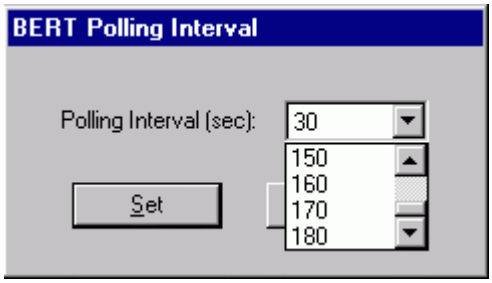


Figure 5-4. BERT Polling Interval Dialog Box

3. Select the desired polling interval. Possible values for polling interval are: **No Polling, 10, 20, 30, 40, ... 180 seconds** (possible values for the far-end modem are 30, ... 180).
   Default value: **No Polling for Polling Off** and **30 sec. for Polling On**.
4. Click ‹**Set**› to implement the changes.

Viewing Modem Statistics

RADview allows you to view modem interval (or current data) statistics in table and graph formats.

Note

- *The Modem Statistics option is not available for ASMi-24, ASMi-51CD, ASMi-51CQ and ASMi-52CD/CD4W/CQ modems.*
- *Statistics are updated in the NMS every 60 seconds. Therefore, when clicking ‹**Refresh**› in the relevant statistics dialog boxes (data tables and graphs), updated statistics appear only after 60 seconds have elapsed.*

Viewing the Modem Interval Table

➤ **To view the Modem Interval Table for an LRS-24 modem:**

1. In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Modem Statistics** › **Interval Table.**

   The following figure shows the Modem Interval Table dialog box, for all modems except FOMi-E1/T1. The Modem Interval Table dialog box for FOMi-E1/T1 is shown in *Figure 5-6*.

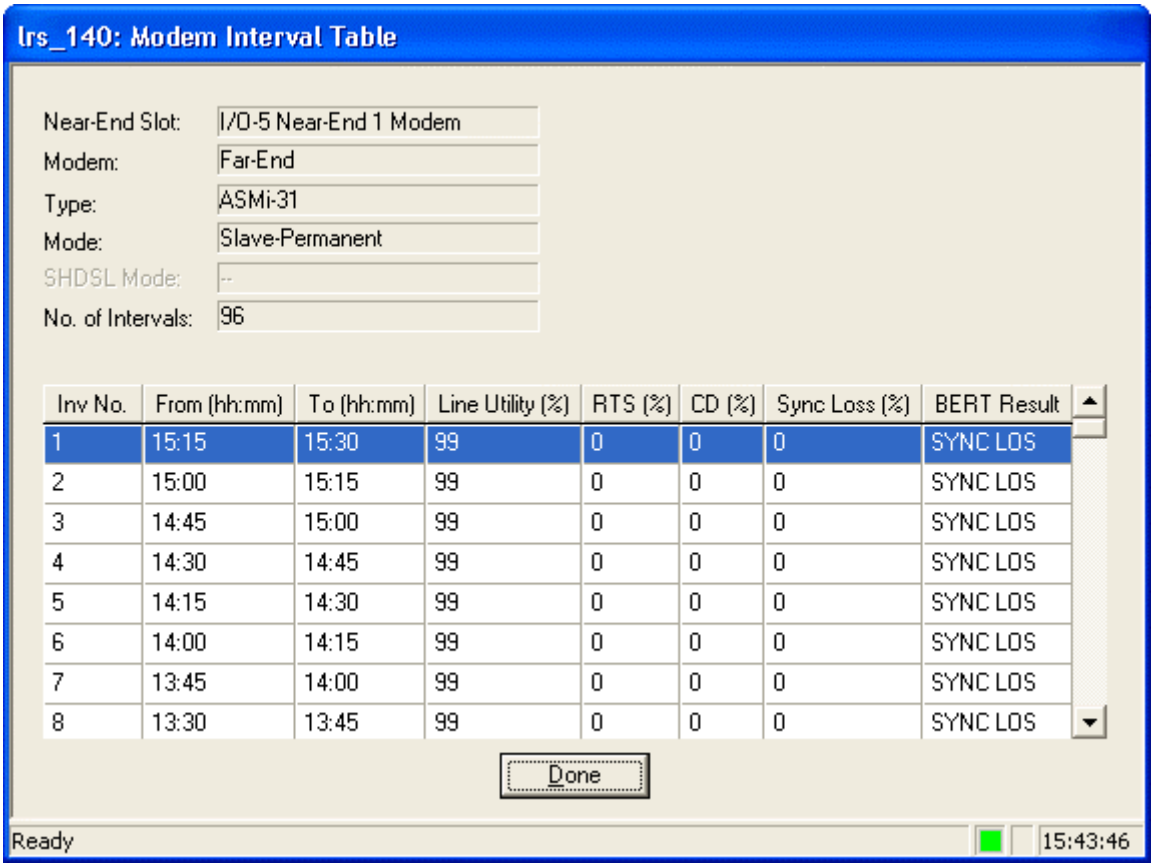

lrs_140: Modem Interval Table
Near-End Slot: I/O-5 Near-End 1 Modem
Modem: Far-End
Type: ASMi-31
Mode: Slave-Permanent
SHDSL Mode: --
No. of Intervals: 96
Inv No. From (hh:mm) To (hh:mm) Line Utility (%) RTS (%) CD (%) Sync Loss (%) BERT Result
1 15:15 15:30 99 0 0 0 SYNC LOS
2 15:00 15:15 99 0 0 0 SYNC LOS
3 14:45 15:00 99 0 0 0 SYNC LOS
4 14:30 14:45 99 0 0 0 SYNC LOS
5 14:15 14:30 99 0 0 0 SYNC LOS
6 14:00 14:15 99 0 0 0 SYNC LOS
7 13:45 14:00 99 0 0 0 SYNC LOS
8 13:30 13:45 99 0 0 0 SYNC LOS
Done
Ready
15:43:46

Figure 5-5. Modem Interval Table Dialog Box

2. Click **Done** to close the dialog box.

   The Modem Interval Table dialog box displays values for various modem parameters. If the list is long, you can scroll (using the scroll bar or scroll arrows) to display more entries.

Table 5-2. Intervals Data Parameters (All Modems except FOMi-E1/T1)

Parameter	Possible Values / Remarks
Inv No.	**1-96** If the number of intervals=0, then the Interval Table has one empty row Read-only
From (hh:mm)	Start time of the interval In **hours** (**hh**) and **minutes**(**mm**). Read-only

Parameter	Possible Values / Remarks
To (hh:mm)	End time of the interval In **hours** (**hh**) and **minutes**(**mm**). Read-only
Line Utility %	**0-100** Read-only
RTS %	**0-100** Read-only
CD %	**0-100** Read-only
Sync Loss %	**0-100** Not available for FOMi-40 Read-only
Line Quality	**Bad**, **Fair**, **Good**, **Sync Loss**, **Unknown** Not available for the ASMi-31, ASMi-31CQ. When Line Quality is not applicable, -- is displayed. Read-only
BERT Result	8 characters (not available for FOMi-40) Read-only

FOMi-E1/T1 Interval Table

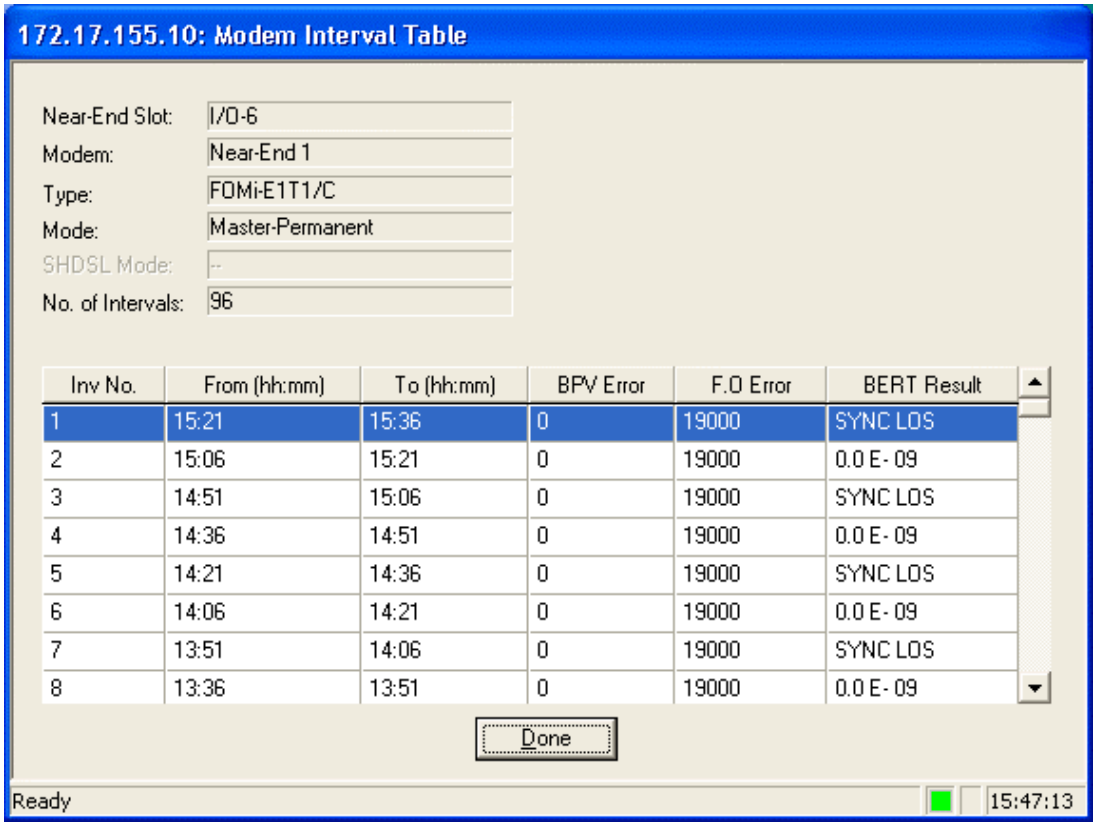

172.17.155.10: Modem Interval Table
Near-End Slot: I/O-6
Modem: Near-End 1
Type: FOMi-E1T1/C
Mode: Master-Permanent
SHDSL Mode: --
No. of Intervals: 96
Inv No. | From (hh:mm) | To (hh:mm) | BPV Error | F.O Error | BERT Result
1 | 15:21 | 15:36 | 0 | 19000 | SYNC LOS
2 | 15:06 | 15:21 | 0 | 19000 | 0.0 E-09
3 | 14:51 | 15:06 | 0 | 19000 | SYNC LOS
4 | 14:36 | 14:51 | 0 | 19000 | 0.0 E-09
5 | 14:21 | 14:36 | 0 | 19000 | SYNC LOS
6 | 14:06 | 14:21 | 0 | 19000 | 0.0 E-09
7 | 13:51 | 14:06 | 0 | 19000 | SYNC LOS
8 | 13:36 | 13:51 | 0 | 19000 | 0.0 E-09
Done
Ready
15:47:13

Figure 5-6. Modem Interval Table Dialog Box (FOMi-E1/T1C Modem)

Table 5-3. Modem Interval Table Parameters (FOMi-E1/T1C)

Parameter	Possible Values / Remarks
Inv No.	1-96 If the number of intervals=0, then the Interval Table will have one empty row. Read-only
From (hh:mm)	The start time of the interval. In hours (hh) and minutes(mm). Read-only
To (hh:mm)	The end time of the interval. In hours (hh) and minutes(mm).Read-only
BPV Error	0 – 63000 Read-only
F.O Error	0 – 63000 Read-only
Line Quality	Bad, Fair, Good, Sync Loss, Unknown If modemLineQuality=notApplicable, '--' is displayed as Line Quality value. Read-only
BERT Result	8 characters Read-only

Note *Line Quality does not exist for the ASMi-24, ASMi-31, and ASMi-31CQ modem families.*

Viewing Displaying the Interval Graph

➤ To view the Interval Graph for an LRS-24 modem:

- In the Zoom view, select the modem (near end or far end), right click and select Statistics › Modem Statistics › Interval Graph.

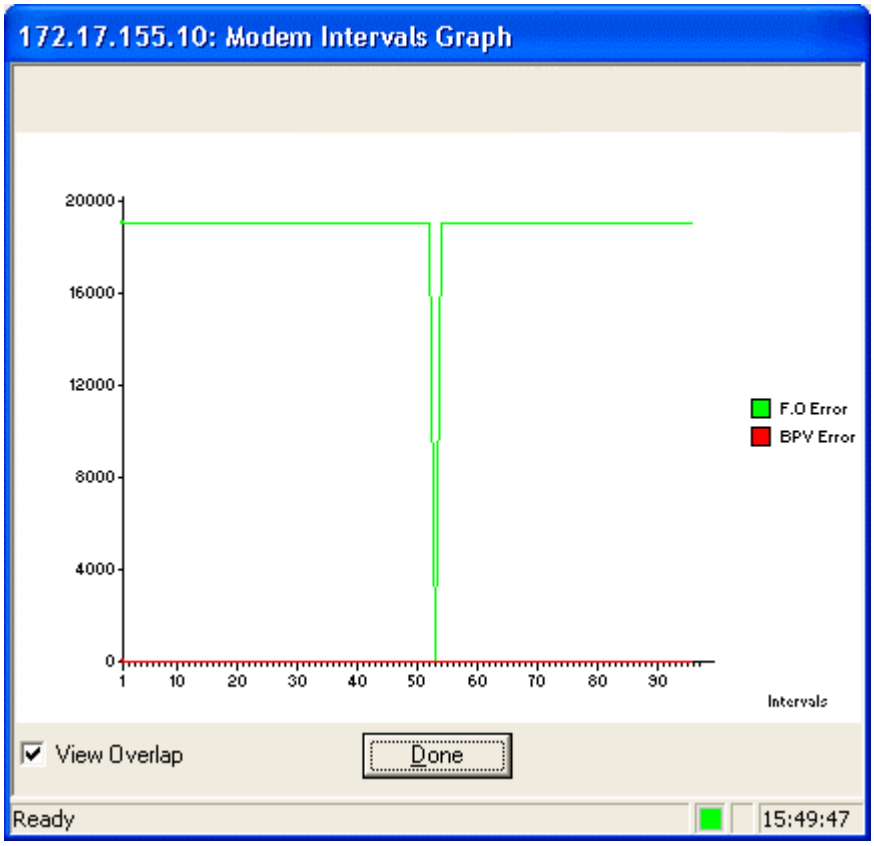


Figure 5-7. Modem Intervals Graph dialog box

The Intervals Graph dialog box charts values for various modem parameters.

- For all modems, except FOMi-E1/T1 and ASMi-24, the Intervals Graph dialog box includes a graph of the parameters: **Line Utility**, **RTS**, **CD**, and **Sync Loss**.
- For FOMi-E1/T1, the Intervals Graph dialog box includes a graph of the parameters: **BPV Error** and **F.O. Error**.

Viewing Intervals Data Table and Graph Simultaneously

Note

Both Intervals Data Table and Graph can be open at the same time (for ASMi-51CD/C or ASMi-52CD/CQ/CD4W. In order to view the graph and table simultaneously, you must open the graph dialog first.

Horizontal Axis

The horizontal axis represents Intervals from 1 to 96. Every time Refresh is performed, the range changes (increases). (For the ASMi-52 family, the number of entries is present in the Intervals Table.)

View Overlap

The graph features **View Overlap** (does not exist if only one parameter is displayed). This is a useful feature when the graph lines overlap. Selecting the **View Overlap** check box activates the **View Overlap** function. This causes a little shift of the overlapping lines (on the vertical axis), so that both are visible on the graph, (not at their exact value, due to the shift). Clearing the check box disables the function and returns to the overlap view.

Viewing Line (HDSL) Statistics

RADview allows you to view line (HDSL) current data and interval statistics, in table and graph formats.

Note

Line (HDSL) Statistics are only available for ASMi-51CD and ASMi-51CQ modems.

Basic tasks include:

- Viewing current data
- Viewing intervals data.

Viewing Current Data

Current Data Table

➤ **To view the line (HDSL) current data table:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line (HDSL)** › **Current Data** › **Table**.

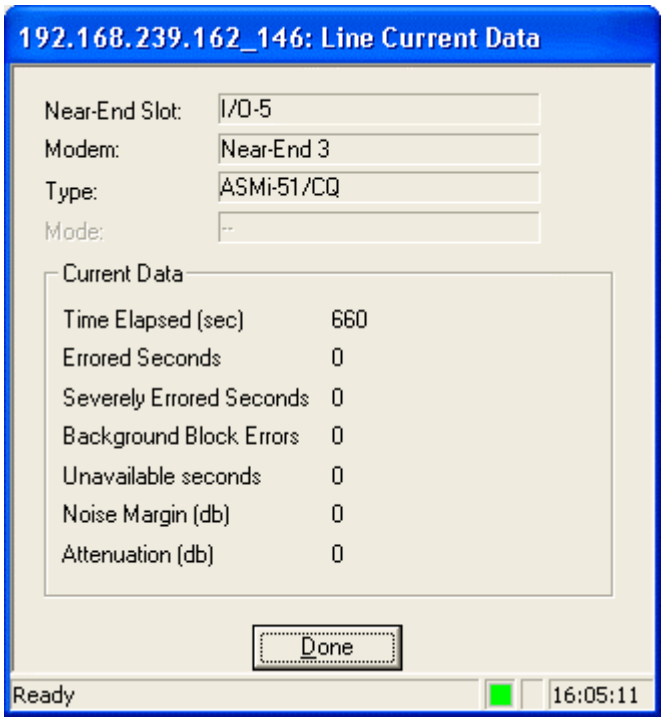


Figure 5-8. Line (HDSL) Current Data Table

Table 5-4. Line (HDSL) Current Data Parameters

Parameter	Possible Values / Remarks
Time Elapsed (sec)	Amount of time that has passed since the beginning of the current 15-minute interval **0..899** Read-only
Errored Seconds	Contain one or more of the following events: • CRC error event, SEF (OOF) event, or AIS • OOF defect is the occurrence of framing bits error If SES is effective concurrently, ES runs for 10 seconds and stops. Read-only
Severly Errored Seconds	Contain 320 or more CRC error events, one or more SEF (OOF), or AIS. OOF defect is the occurrence of framing bits error. Read-only
Background Block Errors	Errored blocks that do not occur in severely errored blocks. **ASMi-51/CD/CQ only** Read-only
Unavailable Seconds	Number of seconds in the current interval in which a failed signal state exists. Read-only
Noise Margin (db)	Noise Margin **ASMi-51/CD/CQ only** Read-only
Attenuation (db)	Attenuation **ASMi-51/CD/CQ only** Read-only

Current Data Graph

➤ To view the Line (HDSL) Current Data graph:

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line (HDSL)** › **Current Data** › **Graph.**

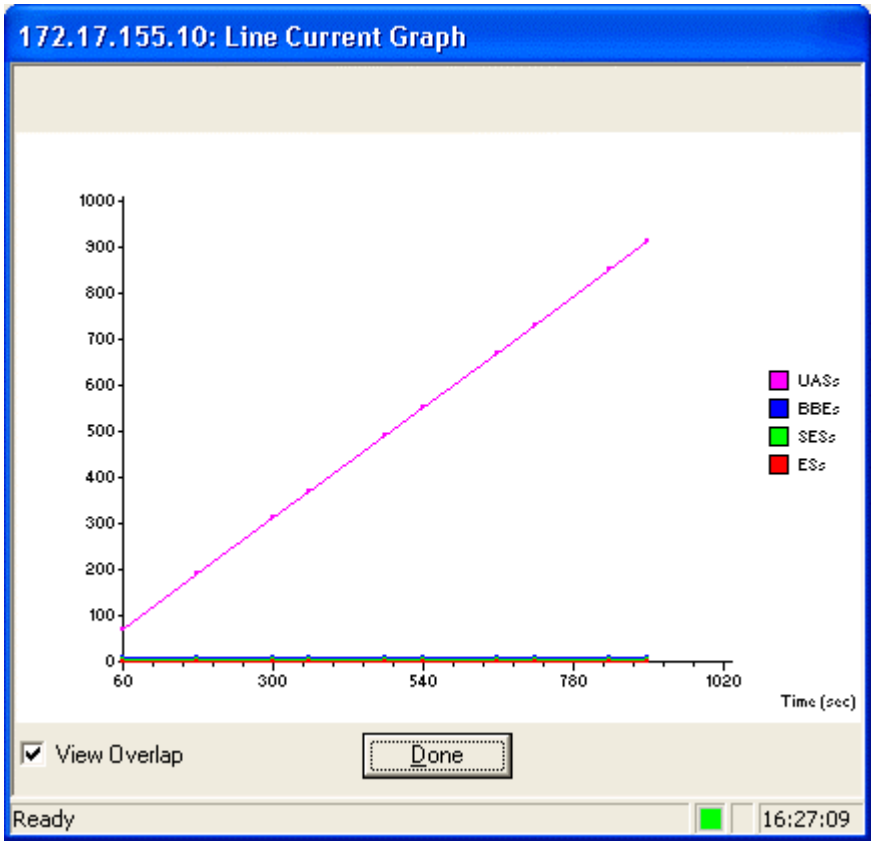


Figure 5-9. Line (HDSL) Current Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10.*

Viewing Intervals Data

Intervals Data Table

➤ **To view the Line (HDSL) Intervals Data table:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line (HDSL)** › **Intervals Data** › **Table.**

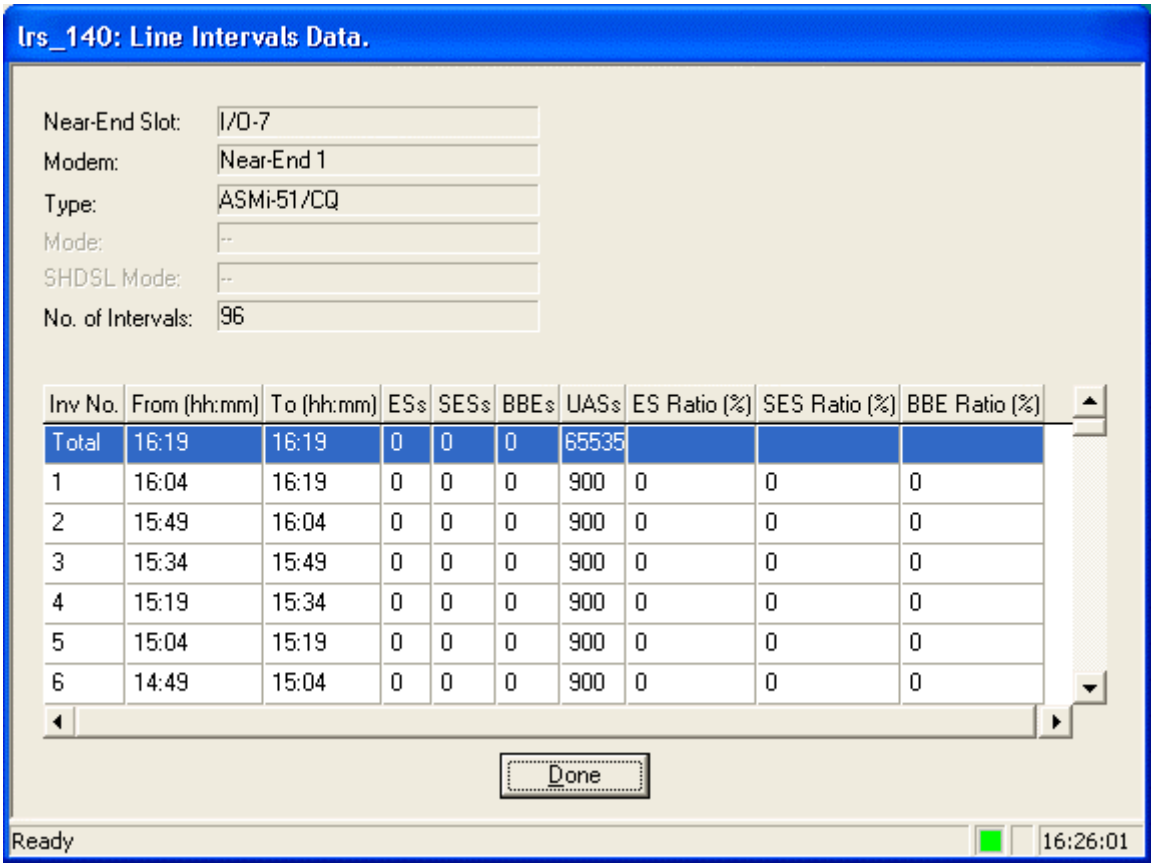

lrs_140: Line Intervals Data.
Near-End Slot: I/O-7
Modem: Near-End 1
Type: ASMi-51/CQ
Mode: --
SHDSL Mode: --
No. of Intervals: 96
Inv No. | From (hh:mm) | To (hh:mm) | ESs | SESs | BBEs | UASs | ES Ratio (%) | SES Ratio (%) | BBE Ratio (%)
Total | 16:19 | 16:19 | 0 | 0 | 0 | 65535
1 | 16:04 | 16:19 | 0 | 0 | 0 | 900 | 0 | 0 | 0
2 | 15:49 | 16:04 | 0 | 0 | 0 | 900 | 0 | 0 | 0
3 | 15:34 | 15:49 | 0 | 0 | 0 | 900 | 0 | 0 | 0
4 | 15:19 | 15:34 | 0 | 0 | 0 | 900 | 0 | 0 | 0
5 | 15:04 | 15:19 | 0 | 0 | 0 | 900 | 0 | 0 | 0
6 | 14:49 | 15:04 | 0 | 0 | 0 | 900 | 0 | 0 | 0
Done
Ready
16:26:01

Figure 5-10. Line (HDSL) Intervals Data Table

Table 5-5. Line (HDSL) Intervals Data Parameters

Parameter	Possible Values / Remarks
Time Elapsed (sec)	Amount of time that has passed since the beginning of the current 15-minute interval **0..899** Read-only
ES	Errored Seconds A second containing one or more of the following events: CRC error event, SEF (OOF) event, or AIS OOF defect is the occurrence of framing bits error If SES is also effective at the same time, ES will run for 10 seconds and stop Read-only
SES	Severely Errored Seconds 320 or more CRC error events, one or more SEF (OOF), or AIS. OOF defect is the occurrence of framing bits error Read-only
BBE	Background Block errors. Errored blocks that do not occur in severely errored blocks. ASMi-51/CD/CQ only Read-only
UAS	Unavailable Seconds Number of seconds in the current interval in which a failed signal state exists Read-only

Parameter	Possible Values / Remarks
ES Ratio (%	ASMi-51/CD/CQ only Read-only
SES Ratio (%	ASMi-51/CD/CQ only Read-only
BBE Ratio (%)	ASMi-51/CD/CQ only Read-only

Intervals Data Graph

➤ To display the interval data graph:

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line (HDSL)** › **Intervals Data** › **Graph.**

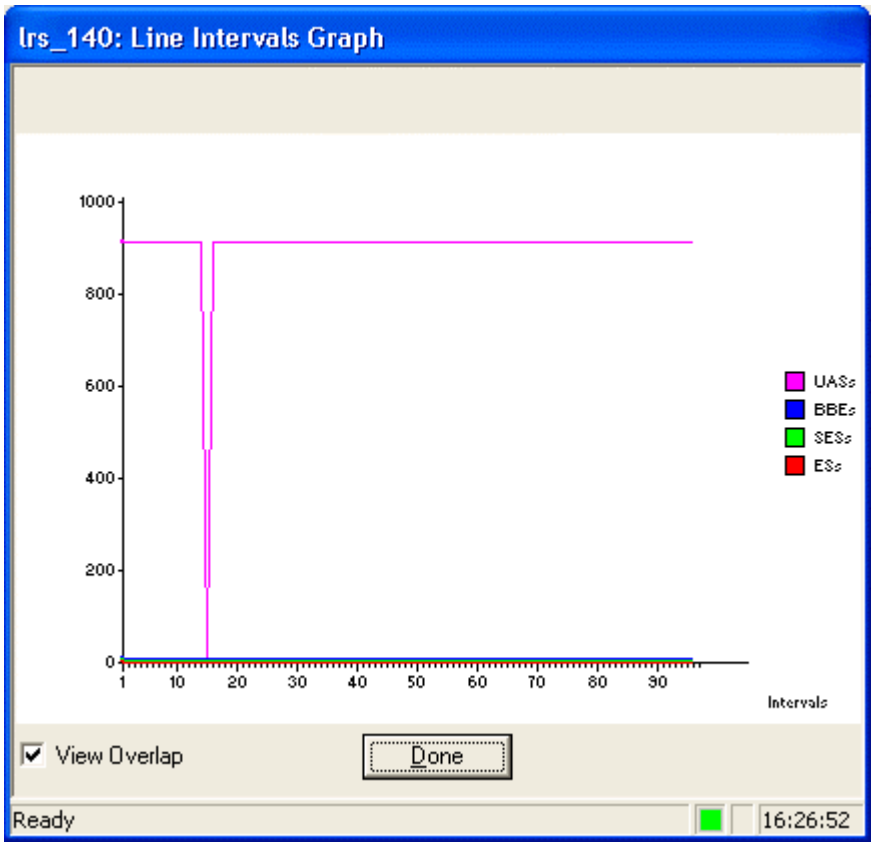


Figure 5-11. Line (HDSL) Intervals Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10.*

Viewing Line (SHDSL) Statistics

RADview allows you to view line (SHDSL) current data, accumulated data and interval statistics, in table and graph formats.

Note *Line (SHDSL) Statistics is available only for ASMi-52CD/CQ/CD4W modems.*

Basic tasks include:

- Viewing 15-Minute current data
- Viewing 15-Minute intervals data
- Viewing one day current data
- Viewing one day intervals data
- Viewing accumulated data.

Viewing 15-Minute Current Data

15-Minute Current Data Table

➤ To view the line (SHDSL) current data table:

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** > **Line A or B (SHDSL)** > **15 min Current Data .**

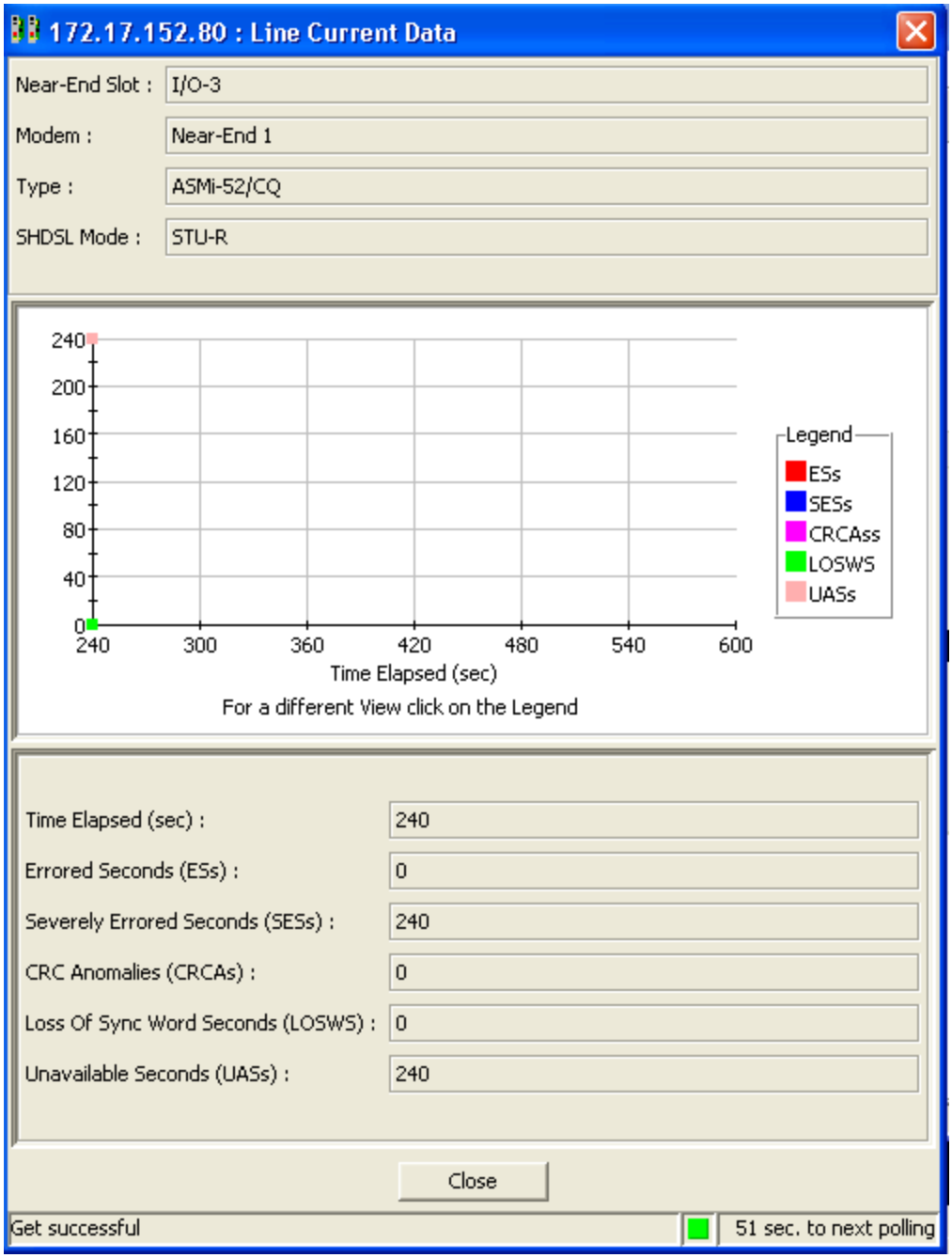


Figure 5-12. Line A or B SHDSL 15 min Current Data Table

Table 5-6. Line (SHDSL) Current Data Parameters

Parameters	Possible Values / Remarks
Near-End Slot	**I/O-1** to **I/O-12** Read-only
Modem	**Near-End** or **Far-End** 1/2 for CD, 1/2/3/4 for CQ Read-only
Type	Modem type **ASMi-52/CD, ASMi-52/CD4w, ASMi-52/CQ** For CDs and CQs only, modem type and number displayed (for example, **ASM-52/CD–Modem 1**) Read-only
Mode	Modem mode **Master-Permanent, Master-Temporary, Slave-Permanent, Slave-Temporary** Read-only
SHDSL Mode	Available for ASMi-52 family only. **STU-C, STU-R** (for Modem Port Line Clock Source) Read-only
Current Data	
Time Elapsed	Amount of time that has passed since the beginning of the current 15-minute interval Read-only
Errored Seconds	Contain one or more of the following events: • CRC error event, SEF (OOF) event, or AIS • OOF defect is the occurrence of framing bits error If SES is effective concurrently, ES runs for 10 seconds and stops. Read-only
Severely Errored Seconds	320 or more CRC error events, one or more SEF (OOF), or AIS. OOF defect is the occurrence of framing bits error. Read-only
CRC Anomalies	ASMi-52CD/CQ only Read-only
Loss of Sync Word Seconds	ASMi-52CD/CQ only Read-only
Unavailabe Seconds	Number of seconds in the current interval in which a failed signal state exists. Read-only

15-Minute Current Data Graph

➤ **To display the current data graph for an LRS-24 modem:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line A or B (SHDSL)** › **15 min Current Data** › **Graph.**

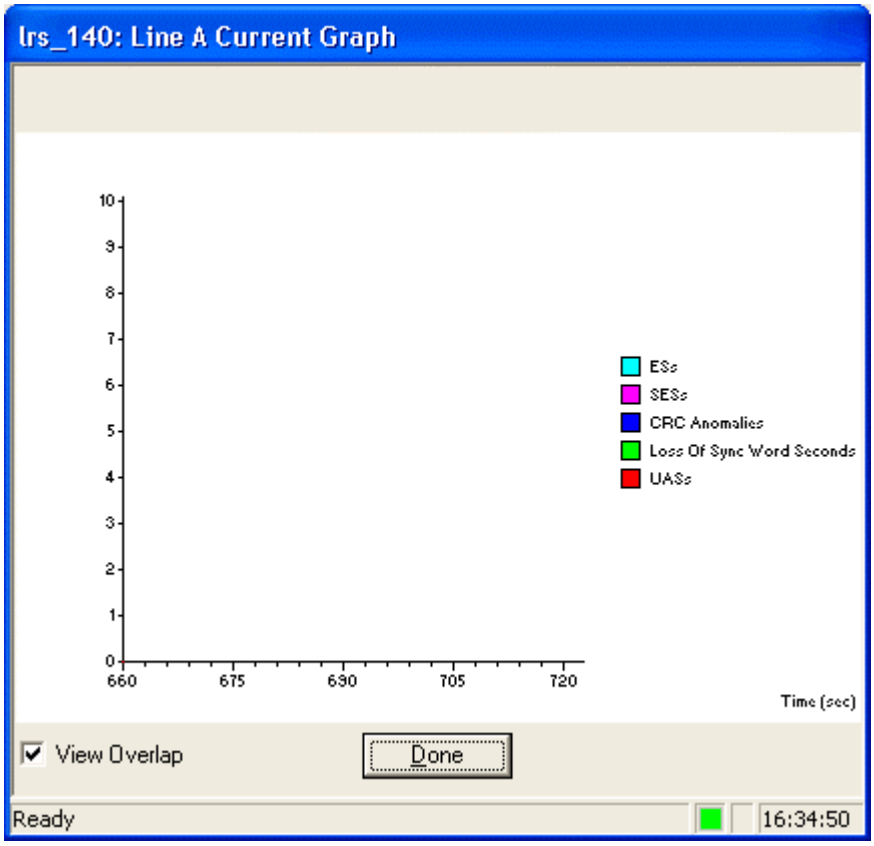


Figure 5-13. Line (SHDSL) Current Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10.*

(For Horizontal Axis, for ASMi-52 family, the number of entries is present in the Intervals Table.)

Viewing the 15-Minute Intervals Data Table

15-Minute Intervals Data Table

(For ASMi-52/CD/CQ, and ASMi-52/CD4W: when modemWire= w2Wire(1) and ASMi-52/CD4w: when modemWire= w4Wire(2) Line A only)

➤ **To display the Line (SHDSL) Statistics for ASMi-52CD/CQ/CD4W modems:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line (HDSL)** › **Intervals Data** › **Table.**

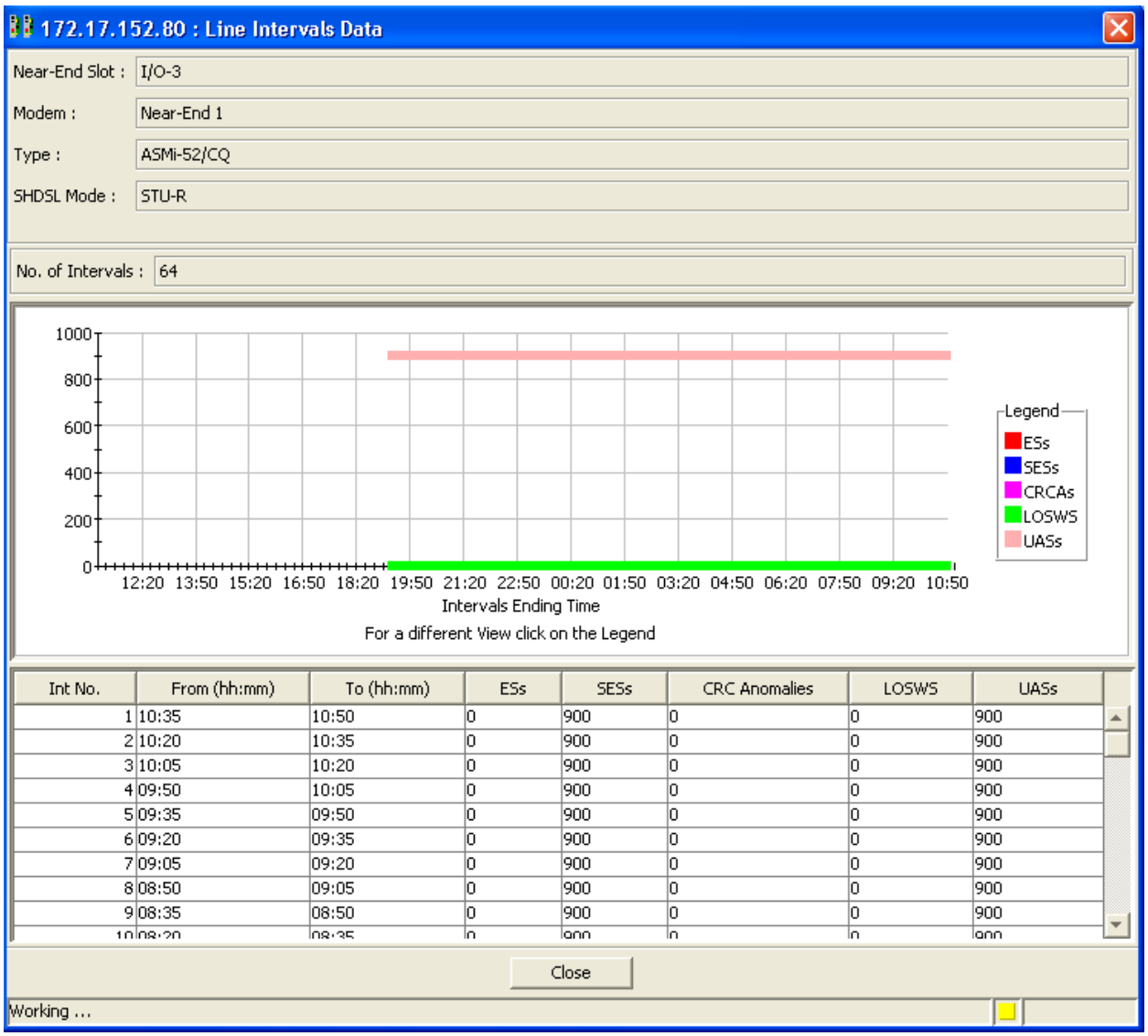


Figure 5-14. Line A or B (SHDSL) 15-Minute Intervals Data

Table 5-7. Intervals Data Parameters

Parameters	Possible Values / Remarks
Near-End Slot	**I/O-1** to **I/O-12** Read-only
Modem	**Near-End** or **Far-End** 1/2 for CD, 1/2/3/4 for CQ Read-only
Type	Modem type **ASMi-52/CD, ASMi-52/CD4w, ASMi-52/CQ** For CDs and CQs only, modem type and number displayed (for example, **ASM-52/CD–Modem 1**) Read-only

Parameters	Possible Values / Remarks
SHDSL Mode	Available for ASMi-52 family only. **STU-C, STU-R** (for Modem Port Line Clock Source) Read-only
Inv No.	**1-96** If the number of intervals=0, then the Interval Table has one empty row Read-only
From (hh:mm)	Start time of the interval In **hours** (**hh**) and **minutes**(**mm**). Read-only
To (hh:mm)	End time of the interval In **hours** (**hh**) and **minutes**(**mm**). Read-only
ES	Errored Seconds A second containing one or more of the following events: CRC error event, SEF (OOF) event, or AIS OOF defect is the occurrence of framing bits error If SES is also effective at the same time, ES will run for 10 seconds and stop Read-only
SES	Severely Errored Seconds 320 or more CRC error events, one or more SEF (OOF), or AIS. OOF defect is the occurrence of framing bits error Read-only
CRC Anomalies	(ASMi 52/CD/CQ only) Read-only
LOSWS	Loss of Sync Word Seconds. (ASMi 52/CD/CQ only) Read-only
UAS	Unavailable Seconds Number of seconds in the current interval in which a failed signal state exists Read-only

15-Minute Intervals Data Graph

➤ **To view the 15-Minute intervals data graph:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line A or B (SHDSL)** › **15 min Intervals Data** › **Graph.**

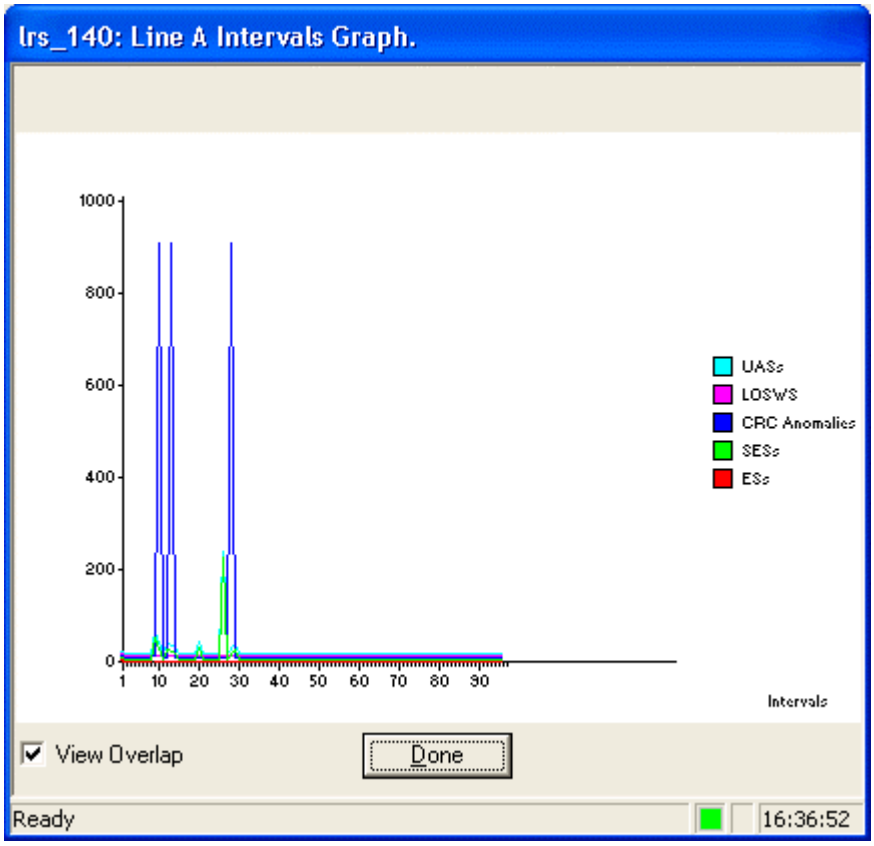


Figure 5-15. Line SHDSL Intervals Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10.*

Viewing One Day Current Data

➤ **To view LINE SHDSL one day current data:**

1. In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line A (SHDSL) or Line B (SHDSL)** › **One Day Current Data**.

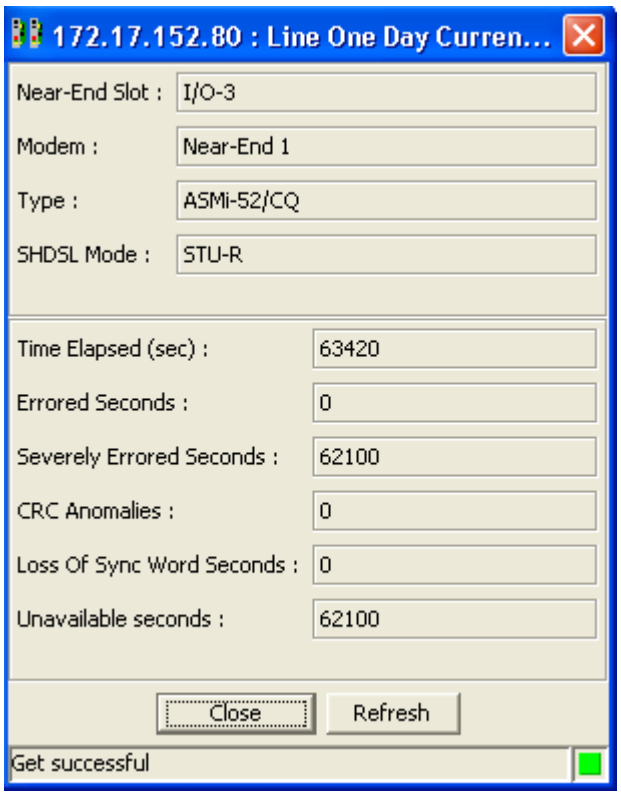


Figure 5-16. Line A or B (SHDSL) One Day Current Data Table

2. View the fields, as described in *Table 5-6*.

   The Status Bar (bottom right corner) in the Line One Day Current Data dialog box includes the following panels:

   - Time pane. Time is the NMS time (in hh: mm: ss) matching the displayed data (updated upon polling).
   - Status pane. Shows the last updated status with a matching color.

Note

There is no graph for One Day Current table. You can view the same information in the 15 min Current Graph (see Figure 5-13).

Viewing One Day Intervals Data

One Day Intervals Data Table

➤ **To view the Line (HDSL) One Day Intervals Data table:**

1. In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Line A (SHDSL) or Line B (SHDSL)** › **One Day Intervals Data.**

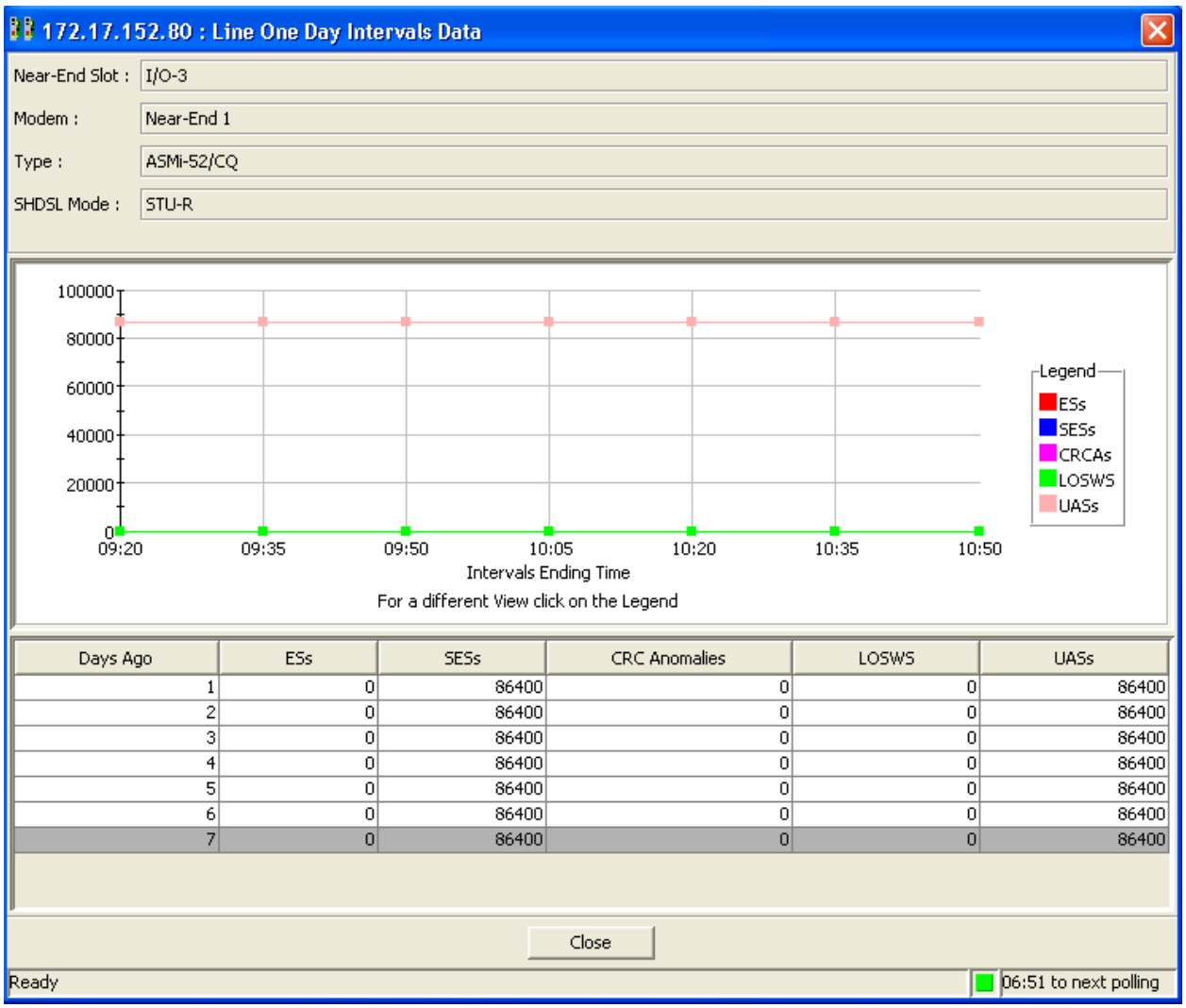


Figure 5-17. Line (SHDSL) One Day Intervals Data Table

2. View the fields, as described in *Table 5-7.*

One Day Intervals Data Graph

➤ **To view the one day intervals data graph:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics > Line A or B (SHDSL) > One day Intervals Data > Graph.**

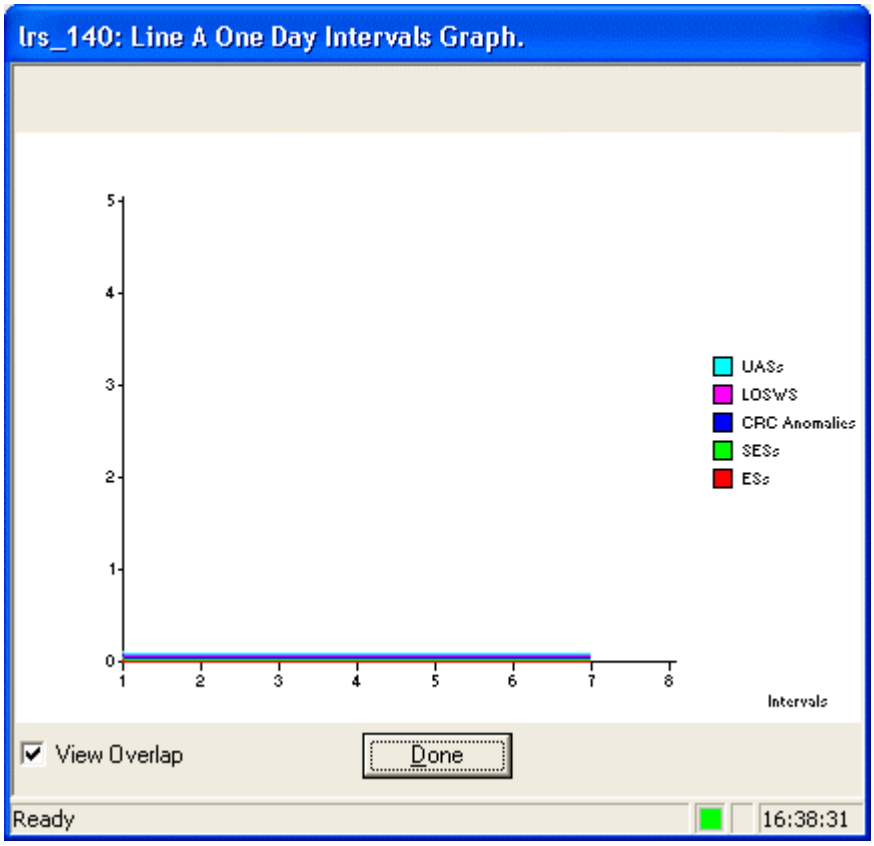


Figure 5-18. Line SHDSL One Day Intervals Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10.*

Viewing Accumulated Data

➤ **To view accumulated current Line SHDSL data**

1. In the Zoom view, select a modem, right click and select **Statistics > Line A (SHDSL) or Line B (SHDSL) > Accumulated Data**.

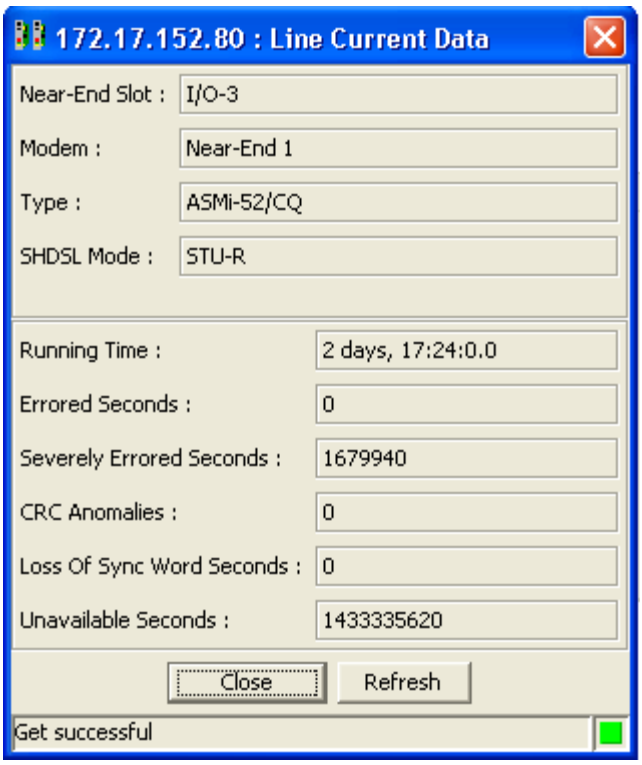


Figure 5-19. Line (SHDSL) Accumulated Current Data Table

2. View the fields, as described in *Table 5-7*.

Viewing DTE (E1) Statistics

RADview allows you to view line interface DTE (E1) statistics in table and in graph formats.

Note

DTE (E1) Statistics differ depending on the Line Type of the E1 interface. Interface Statistics are available for E1 interfaces with Line Type=E1, E1-MF, Unframed.

Basic tasks include:

- Viewing interface statistics
- Viewing interface Performance current statistics
- Viewing performance interval statistics.

Viewing Interface Statistics

➤ **To view DTE (E1) Statistics:**

1. In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **DTE (E1)** › **Interface Statistics.**

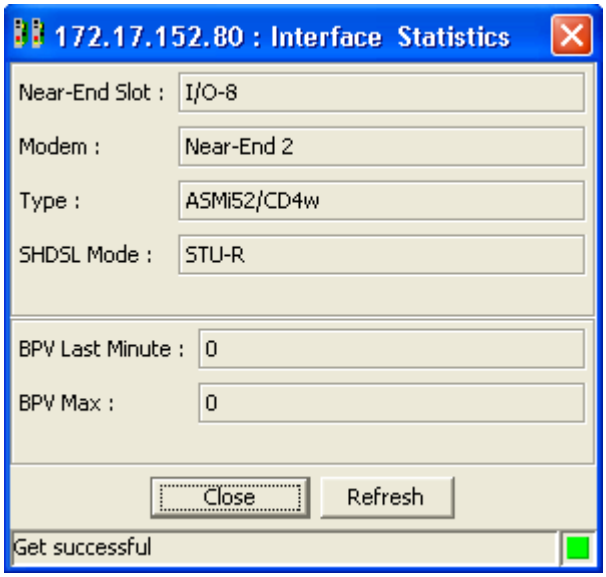


Figure 5-20. Interface Statistics Table

2. View the fields, as described in *Table 5-8*.

Viewing Interface Performance Current Statistics

DTE (E1) Statistics differ depending on the Line Type of the E1 interface. Interface Performance Statistics are available for E1 interfaces with Line Type=E1-CRC, E1-CRC-MF, in table and in graph formats.

Interface Performance Current Data Table

➤ **To view DTE (E1) Interface Performance Statistics table:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **DTE (E1)** › **Interface Performance** › **Current Data** › **Table**.

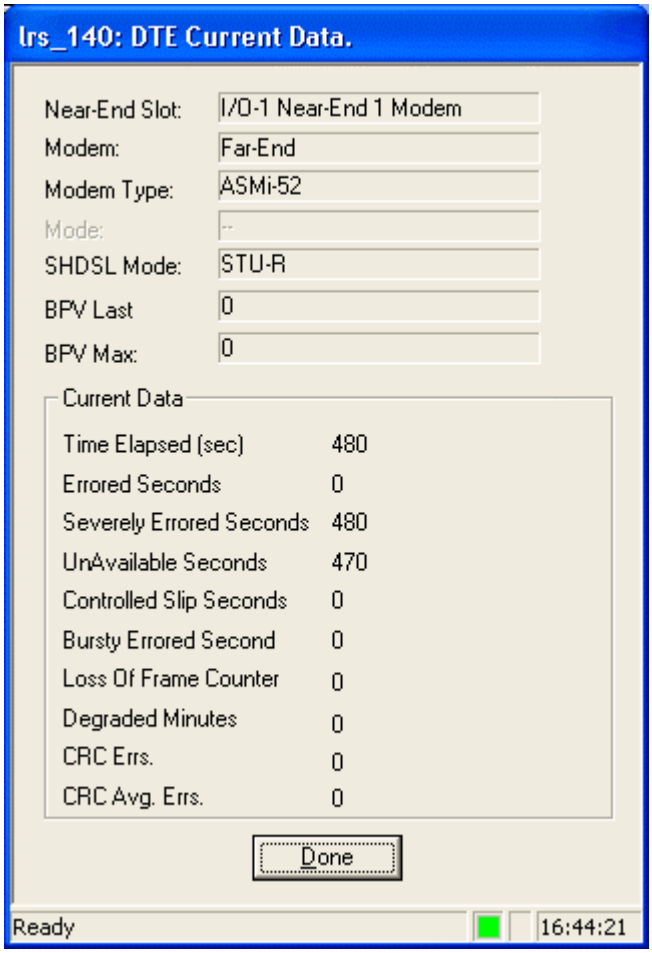


Figure 5-21. DTE Current Data Table

The Status Bar (bottom right corner) in the DTE Current Data Table includes the following panels:

- Time pane. Time is the NMS time (in hh: mm: ss) matching the displayed data (updated upon polling).
- Status pane. Shows the last updated status with a matching color.

Table 5-8. DTE (E1) Current Data Parameters

Parameters	Possible Values / Remarks
Near-End Slot	I/O-1 to I/O-12 Read-only
Modem	Near-End or Far-End 1/2 for CD, 1/2/3/4 for CQ Read-only
Type	Modem type ASMi-51/CQ/CD/SA, ASMi-52/CD/CD4w/CQ/SA For CDs and CQs only, modem type and number displayed (for example, ASM-52/CD–Modem 1) Read-only

Parameters	Possible Values / Remarks
Mode	Modem mode **Master-Permanent, Master-Temporary, Slave-Permanent, Slave-Temporary** Read-only
SHDSL Mode	Available for ASMi52 family only. **STU-C, STU-R** (for Modem Port Line Clock Source) Read-only
BPV Last Minute	modmPrtDs1BpvLastMin Read-only
BPV Max	modmPrtDs1BpvMax Read-only
Current Data	
Time Elapsed (sec)	Amount of time that has passed since the beginning of the current 15-minute interval **0..899** Read-only
Errored Seconds	A second containing one or more of the following events: CRC error event, SEF (OOF) event, or AIS OOF defect is the occurrence of framing bits error If SES is also effective at the same time, ES will run for 10 seconds and stop Read-only
Severely Errored Seconds	320 or more CRC error events, one or more SEF (OOF), or AIS. OOF defect is the occurrence of framing bits error Read-only
UnAvailable Seconds	Number of seconds in the current interval in which a failed signal state exists Read-only
Controlled Slip Seconds	Number of Controlled Slip Seconds Read-only
Bursty Errored Seconds	Number of Bursty Errored Seconds Read-only
Loss of Frame Counter	ASMi-52CD/CQ only Read-only
Degraded Minutes	ASMi-52CD/CQ only) Read-only
CRC Errs.	ASMi-52CD/CQ only Read-only
CRC Avg Errs.	(ASMi-52CD/CQ only Read-only

Interface Performance Current Data Graph

➤ To view DTE (E1) Interface Performance Statistics Graph:

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **DTE (E1)** › **Interface Performance** › **Current Data** › **Graph**.

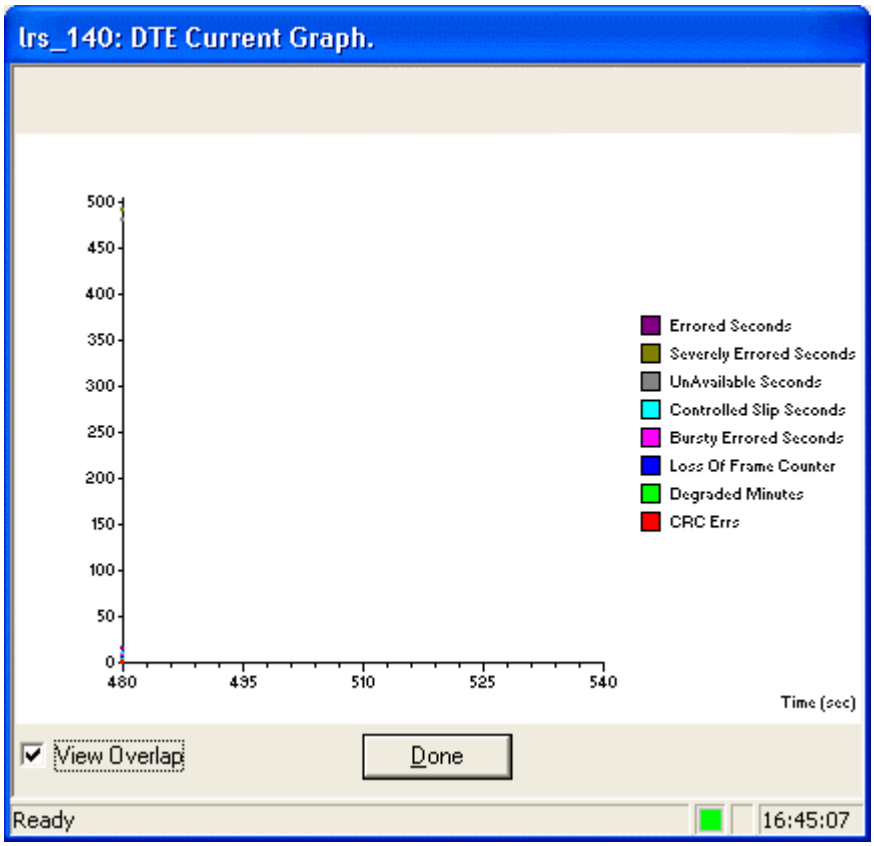


Figure 5-22. DTE Current Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10.*

Viewing Interface Performance Intervals Statistics

Interface Performance Intervals Data Table

➤ To view DTE (E1) Interface Performance Statistics table:

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **DTE (E1)** › **Interface Performance** › **Intervals Data** › **Table.**

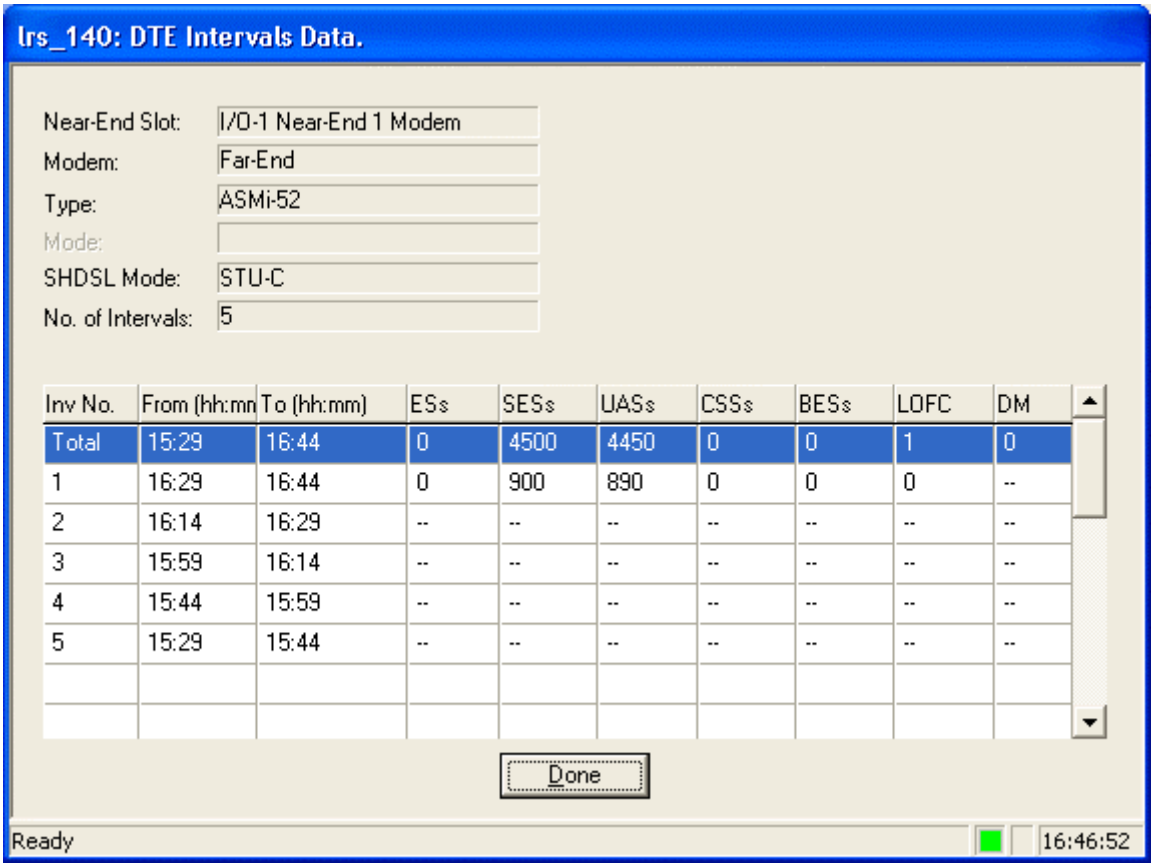

lrs_140: DTE Intervals Data.
Near-End Slot: I/O-1 Near-End 1 Modem
Modem: Far-End
Type: ASMi-52
Mode:
SHDSL Mode: STU-C
No. of Intervals: 5
Inv No. From (hh:mm To (hh:mm) ESs SESs UASs CSSs BESs LOFC DM
Total 15:29 16:44 0 4500 4450 0 0 1 0
1 16:29 16:44 0 900 890 0 0 0 --
2 16:14 16:29 -- -- -- -- -- -- --
3 15:59 16:14 -- -- -- -- -- -- --
4 15:44 15:59 -- -- -- -- -- -- --
5 15:29 15:44 -- -- -- -- -- -- --
Done
Ready
16:46:52

Figure 5-23. DTE (E1) Intervals Data Table

The data in this DTE (E1) Intervals Data Table updated by polling every 900 seconds (this is the accuracy Agents data).

The Status Bar (bottom right corner) in the DTE Intervals Data Table includes the following panels:

- Time pane. Time is the NMS time (in hh: mm: ss) matching the displayed data (updated upon polling).
- Status pane. Shows the last updated status with a matching color.

Table 5-9. DTE (E1) Intervals Data Parameters

Parameters	Possible Values / Remarks
Near-End Slot	**I/O-1** to **I/O-12** Read-only
Modem	**Near-End** or **Far-End** 1/2 for CD, 1/2/3/4 for CQ Read-only
Type	Modem type **ASMi-51/CQ/CD/SA, ASMi-52/CD/CD4w/CQ/SA** For CDs and CQs only, modem type and number displayed (for example, **ASM-52/CD–Modem 1**) Read-only

Parameters	Possible Values / Remarks
Mode	Modem mode **Master-Permanent, Master-Temporary, Slave-Permanent, Slave-Temporary** Read-only
SHDSL Mode	Available for ASMi52 family only. **STU-C, STU-R** (for Modem Port Line Clock Source) Read-only
No. of Intervals	**1-96** If the number of intervals=0, then the Interval Table has one empty row Read-only
Inv No.	**1-96** If the number of intervals=0, then the Interval Table has one empty row Read-only
From (hh:mm)	Start time of the interval In **hours** (**hh**) and **minutes**(**mm**). Read-only
To (hh:mm)	End time of the interval In **hours** (**hh**) and **minutes**(**mm**). Read-only
ES	Errored Seconds A second containing one or more of the following events: CRC error event, SEF (OOF) event, or AIS OOF defect is the occurrence of framing bits error If SES is also effective at the same time, ES will run for 10 seconds and stop Read-only
SES	Severely Errored Seconds 320 or more CRC error events, one or more SEF (OOF), or AIS. OOF defect is the occurrence of framing bits error Read-only
UAS	Unavailable Seconds Number of seconds in the current interval in which a failed signal state exists Read-only
CSS	Number of Controlled Slip Seconds Read-only
BES	Number of Bursty Errored Seconds Read-only
LOFC	Loss of Frame Counter Read-only
DM	Degraded Minutes ASMi-52/CD/CQ only Read-only

Interface Performance Intervals Data Graph

➤ **To display DTE (E1) Interface Performance Interval Statistics Graph:**

- In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **DTE (E1)** › **Interface Performance** ›**Intervals Data** › **Graph**.

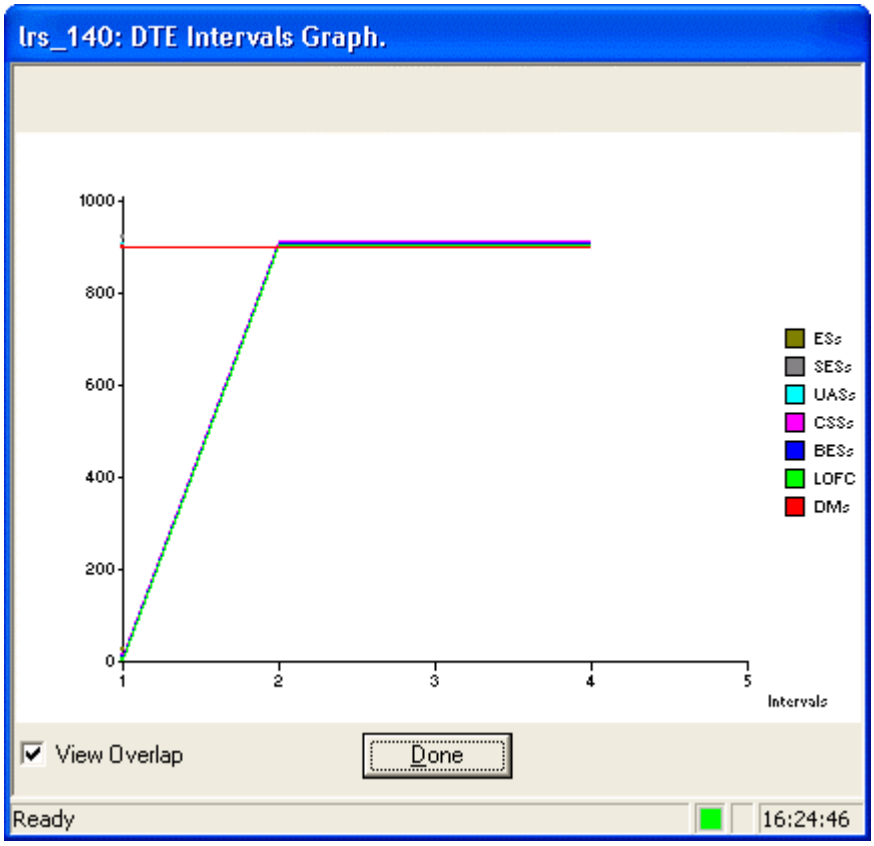


Figure 5-24. DTE Intervals Graph

See *Viewing Intervals Data Table and Graph Simultaneously* on page *5-10*, *Horizontal Axis* on page *5-10*, and *View Overlap* on page *5-10*.

Resetting Statistics

➤ **To reset all the statistics counters for a modem:**

1. In the Zoom view, select the modem (near end or far end), right click and select **Statistics** › **Reset Statistics**.

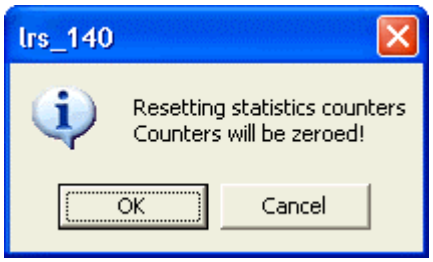


Figure 5-25. Resetting Statistics

2. Press ‹**OK**› to confirm.

Chapter 6

Fault Management

This chapter discusses how to manage faults for the LRS-24 system, cards, and modems using RADview/TDM.

Managing faults includes the following tasks:

- Managing system alarms
  - Updating system installation registry
  - Masking and listing alarm traps.
- Managing card alarms
- Managing modem alarms
  - Viewing active modem alarms
  - Masking modem traps.

6.1 Managing System Alarms

RADview allows you to filter system alarms. Managing system alarms includes the following tasks:

- Updating system installation registry
- Masking and listing alarms.

Updating System Installation Registry

You can specify the connectivity of far-end modems to prevent generating alarm messages from disconnected modems. See *Updating System Installation Registry in Chapter 2*.

Masking and Listing Alarm Traps

You can mask the alarm traps by either masking or listing the modems.

Masking Alarm Traps

In RADview you can choose to mask alarm traps, per selected slot. However, the "masking" functionality masks only the traps related to the selected alarm.

Masking system alarm traps (i.e. all alarms of the entire slot) prevents the sending of alarm traps for this slot.

Note *Masking alarms at the system level overrides specific card or modem alarms masks. (If you do not designate masking at the system level, then the specific card or modem Alarm mask applies.)*

➤ **To mask LRS-24 system alarm traps:**

1. Select the system by clicking inside the LRS-24 View window, without selecting a device. Ensure that no border surrounds any of the modem cards.
2. Right click and select **Fault** › **Alarms** › **Mask.**

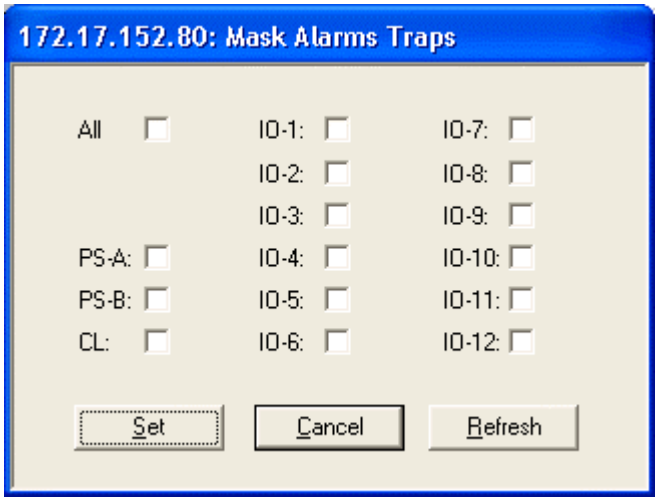


Figure 6-1. Mask Alarms Traps Dialog Box

3. Select or clear the relevant check boxes adjacent to the modem slot numbers. Only the check boxes of slots of installed cards are enabled. Other slots are disabled (appear gray).
4. Click ‹**Set**› to implement the updated list of masks.

Listing Alarms

➤ **To list/view active alarms per specified LRS-24 slots:**

1. Select the system by clicking inside the LRS-24 View window, without selecting a device. Ensure that no border surrounds any of the modem cards.
2. Right click and select › **Fault** › **Alarm** › **List.**

   The System Alarms dialog box opens, displaying slots with active alarms (**On**) and slots with inactive alarms (**--**). Only slots in which cards have been installed are listed. Other slots are grayed out.

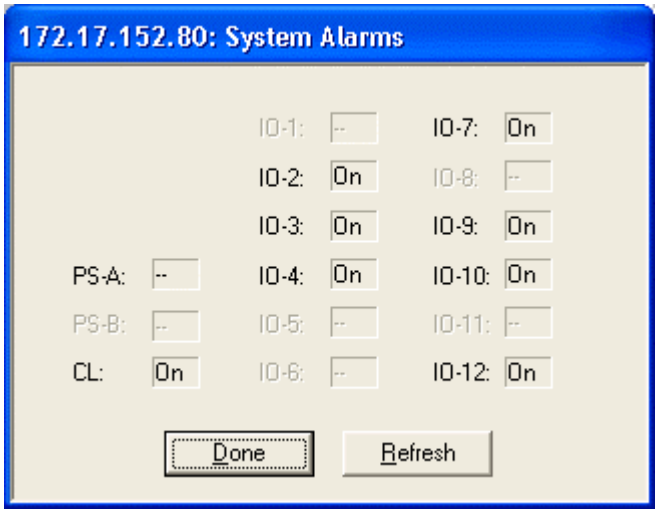


Figure 6-2. The System Alarms Dialog Box

3. Click ‹**Done**› to close the dialog box.

6.2 Managing Card Alarms

This section discusses managing PS and CM-2 card active alarms. PS and CM-2 card alarm operations are available in the LRS-24 View window. (However, modem card alarm operations are available only in Zoom view, as described in *Managing Modem Alarms*.)

Listing PS and CM-2 Card Active Alarms

➤ **To list PS or CM-2 Card active alarms:**

1. In the LRS-24 View window, select a **PS or CM-2 card** by clicking on it.

   A blue border outlines the selected card.

2. Right click and select **Fault › Alarms.**

   The following figure shows a sample CM-2 Active Alarm List Dialog Box, displaying slots with active alarms (**On**) and slots with inactive alarms (**--**). The list includes only those slots in which cards have been installed. Other slots are grayed out.

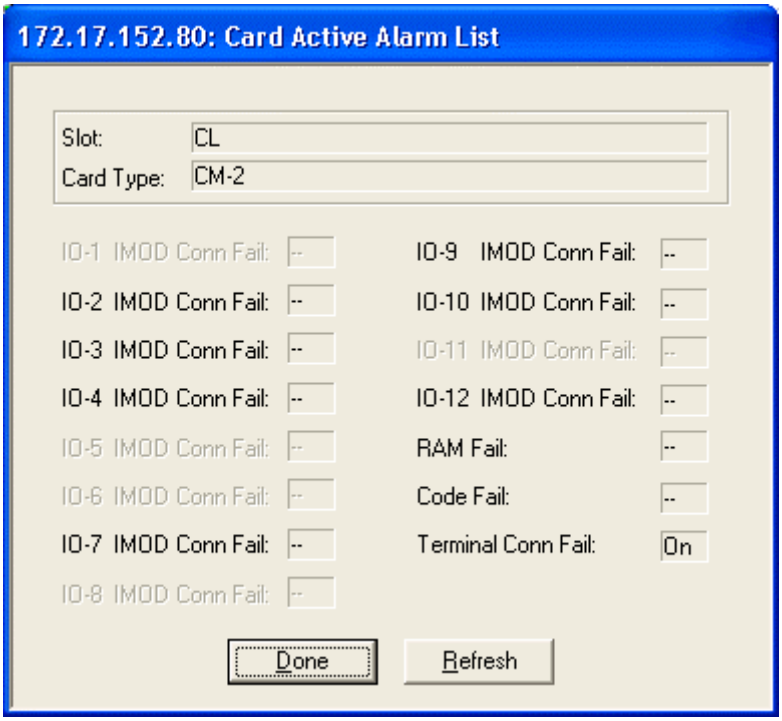

172.17.152.80: Card Active Alarm List
Slot: CL
Card Type: CM-2
IO-1 IMOD Conn Fail: --
IO-2 IMOD Conn Fail: --
IO-3 IMOD Conn Fail: --
IO-4 IMOD Conn Fail: --
IO-5 IMOD Conn Fail: --
IO-6 IMOD Conn Fail: --
IO-7 IMOD Conn Fail: --
IO-8 IMOD Conn Fail: --
IO-9 IMOD Conn Fail: --
IO-10 IMOD Conn Fail: --
IO-11 IMOD Conn Fail: --
IO-12 IMOD Conn Fail: --
RAM Fail: --
Code Fail: --
Terminal Conn Fail: On
Done
Refresh

Figure 6-3. Card Active Alarm List Dialog Box

3. Click ‹**Done**› to close the dialog box.

6.3 Managing Modem Alarms

RADview manages modem alarms including the following tasks:

- Viewing active modem alarms
- Viewing alarm history from the LRS-24 Alarm Buffer
- Masking modem traps.

Note

You can manage modem card alarms in Zoom view only.

Viewing Active Modem Alarms

➤ **To view the active alarms (sent to the LRS-24 agent by the modem):**

1. In the Zoom view, select the modem (near end or far end) right click and select› **Fault** menu › **Alarms**.

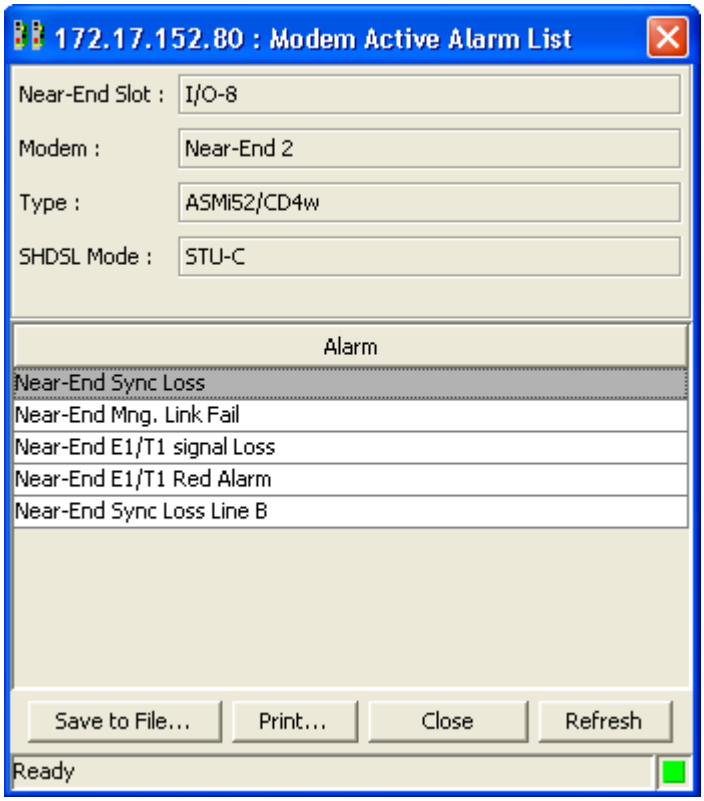


Figure 6-4. Modem Active Alarm List Dialog Box

2. To save the current Modem Active Alarm List as a data file, click ‹**Save to File**›.
3. Click ‹**Done**› to close the dialog box.

Viewing Alarm History in the Alarm Buffer

The LRS-24 alarm buffer contains all of the alarms listed in the history log.

➤ **To view all the alarms in the LRS-24 alarm buffer:**

1. In the Zoom view, select a modem (near end or far end), right click and select **Fault › History Log › List.**

   The Modem Alarm Buffer List dialog box opens, displaying all recorded alarms generated after the time of the previous log clearing. If the list is long, you can scroll to view more entries.

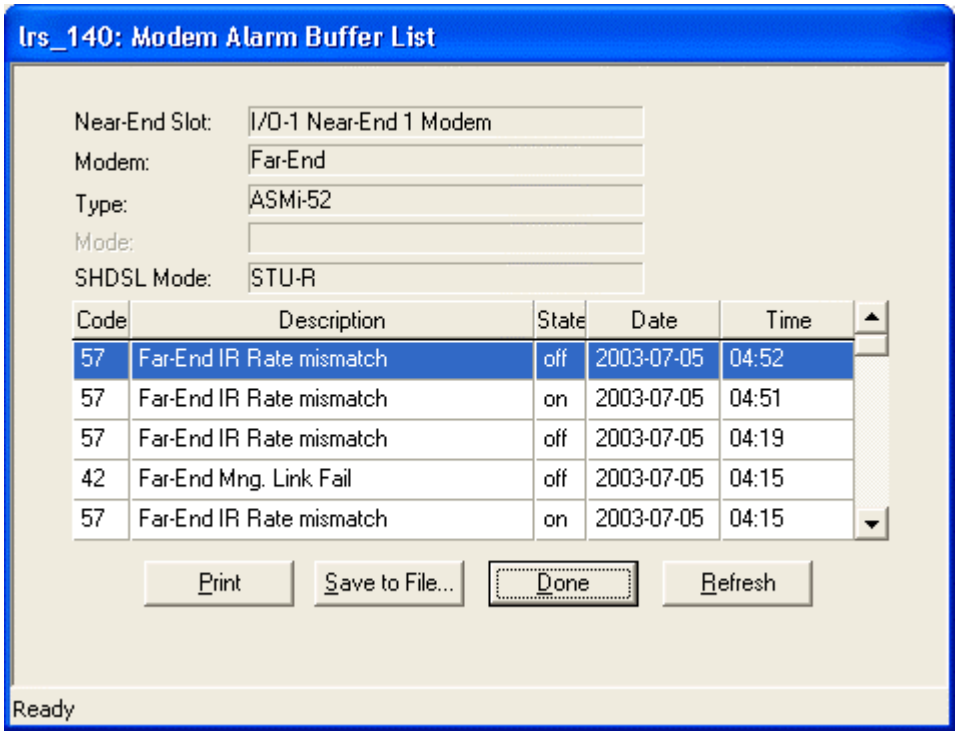


Figure 6-5. Modem Alarm Buffer List Dialog Box

2. To print the Modem Alarm Buffer List, click ‹**Print**›.
3. To save the Modem Alarm Buffer List as a data file, click ‹**Save to File**›.
4. Click ‹**Done**› to close the dialog box.

Table 6-1. Modem Alarm Buffer List Parameters

Parameter	**Possible Values / Remarks**
Code	Alarm code Read-only
Description	Description of the alarm Read-only
State	Alarm State **On**, **Off** Read-only
Date	Date the alarm occurred Read-only
Time	Time the alarm occurred **hours (hh)**, **minutes (mm)**, and **seconds (ss)** Read-only

Clearing Alarms in the Alarm Buffer

You can clear the alarm history log contained in the LRS-24 Alarm Buffer.

Note

This is applicable only for ASMi-51CD/CQ, ASMi-52CD/CQ/CD4W and some SMODs.

➤ **To clear all alarms in the LRS-24 alarm buffer:**

- In the Zoom view, select the modem (near end or far end), right click and select **Fault** › **History Log** › **Clear.**

  The alarm buffer is cleared.

  All active alarms are eventually reactivated and then reappear in the LRS-24 Modem Active Alarm List and Alarm Buffer, shown above.

Masking Modem Traps

You can specify the modem trap you want to mask.

Note

This is not supported for SMODs. For additional information, see Updating System Installation Registry.

➤ **To mask a trap:**

1. In the Zoom view, select the modem (near-end or far-end), right click and select **Fault** › **Mask Traps.**

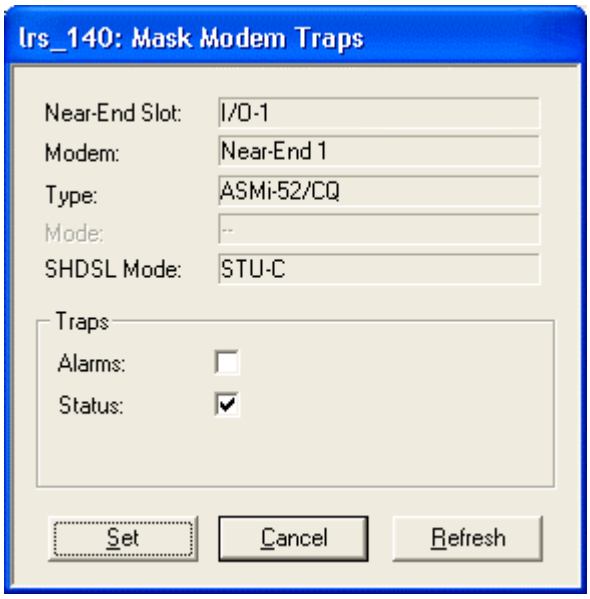


Figure 6-6. Mask Modem Traps Dialog Box

2. In the Traps area, select the traps to be masked, by selecting the relevant check box, as follows:
   - Select **Alarms** to mask all alarm traps.
   - Select **Status** to mask status traps.
3. Click ‹**Set**› to mask the selected traps.

Appendix A

Software Upgrades

This chapter discusses managing the software inventory in the network, as well as distributing software upgrades using RADview.

Managing software upgrades includes the following tasks:

- Internal software download - checking internal download status
- External software download – checking external download status.

Note

- *Software download is relevant only for CM-2, ASMi-31CQ, ASMi-51CD/CQ, ASMi-52CD/CQ/CD4W cards.*
- *Do not perform reset during software download.*

A.1 Downloading Internal Software

The procedures for downloading software from the CM-2 card and the ASMi card family vary slightly, as explained in the following procedures.

Downloading a Modem from the CM-2

➤ To download software from CM-2:

1. In the LRS-24 View window, select the CM-2 card.

   A blue border outlines the selected card.

2. Right click, and select **Options** > **Int. SW. Download.**

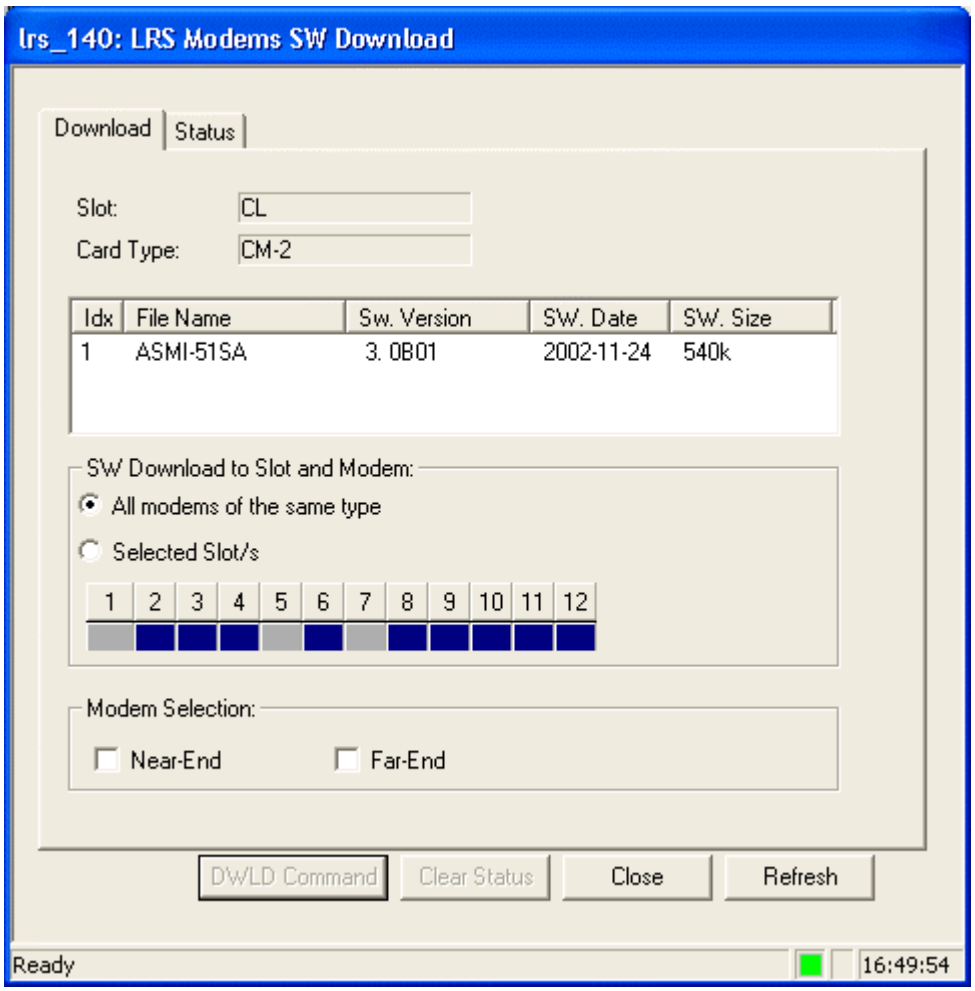


Figure A-1. LRS Modems SW Download Dialog Box – CM-2

3. Select the file you want to download. (By default, the first file in the SW Download list is the current file in the modem (i.e. already downloaded). Therefore, choose the second and successive files listed.) For descriptions of the fields, see *Table A-1.*
4. In the SW Download to Slot and Modem area, select an option by clicking the relevant radio button. The options include:
   - All modems of the same type

     or
   - Specific IMOD slot.
5. In the Slot/Modem table, to select an IMOD slot, place the mouse cursor over the desired slot, and left click. The slot color turns yellow.
6. In the Modem Selection area, select **Near-End** or **Far-End** modem by selecting the relevant check box.
7. Click ‹**DWLD Command**›.

   A confirmation message appears "Transferring selected SW file. The current modem SW will be updated".
8. Click ‹**OK**› to begin download.

Downloading ASMi Software

➤ **To download software from ASMi-51CD/CQ or ASMi-52CD/CQ/CD4W:**

1. In the LRS-24 View window, select an ASMi-51CD/CQ or ASMi-52CD/CQ/CD4W card (or an ASMi-31CQ, only for the FE, or ASMi-51SA).

   A blue border outlines the selected card.

2. Right-click and select **Options › SW. Download › Int. SW. Download**.

   For the ASMi-52 family, the Far-End check box is disabled.

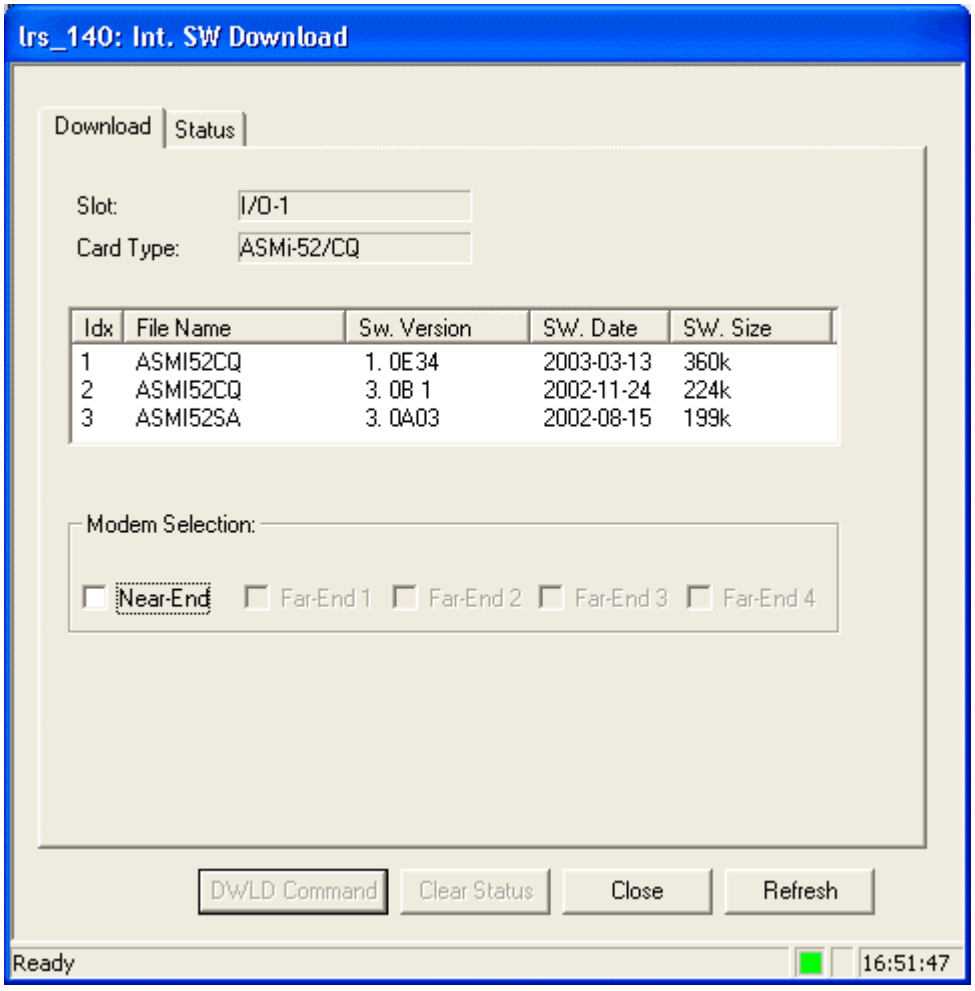


Figure A-2. Internal SW Download Dialog Box

3. Select the file you want to download. For descriptions of the fields, see *Table A-1.*

4. From the Modem Selection area, select the check box of the relevant **Near-end** or **Far-end** modem.

5. Click ‹**DWLD Command**›.

   A confirmation message appears “Transferring selected SW file. The current modem SW will be updated”.

6. Click ‹**OK**› to begin download.

Table A-1. Internal Software Download Parameters

Parameter	Possible Values / Remarks
Slot	Selected slot. I/O 1-11 Read-only
Card Type	Card type Read-only
Idx	Identification number of the software version Read-only
File name	Name of the file Read-only
SW Version	Version of software currently in card memory Read-only
SW Date	Date of software currently in card memory Read-only
SW Size	Size of software currently in card memory Read-only

Checking the Internal Download Status

➤ To check download status:

1. In the **LRS Modems SW Download** dialog box, click the **Status** tab.

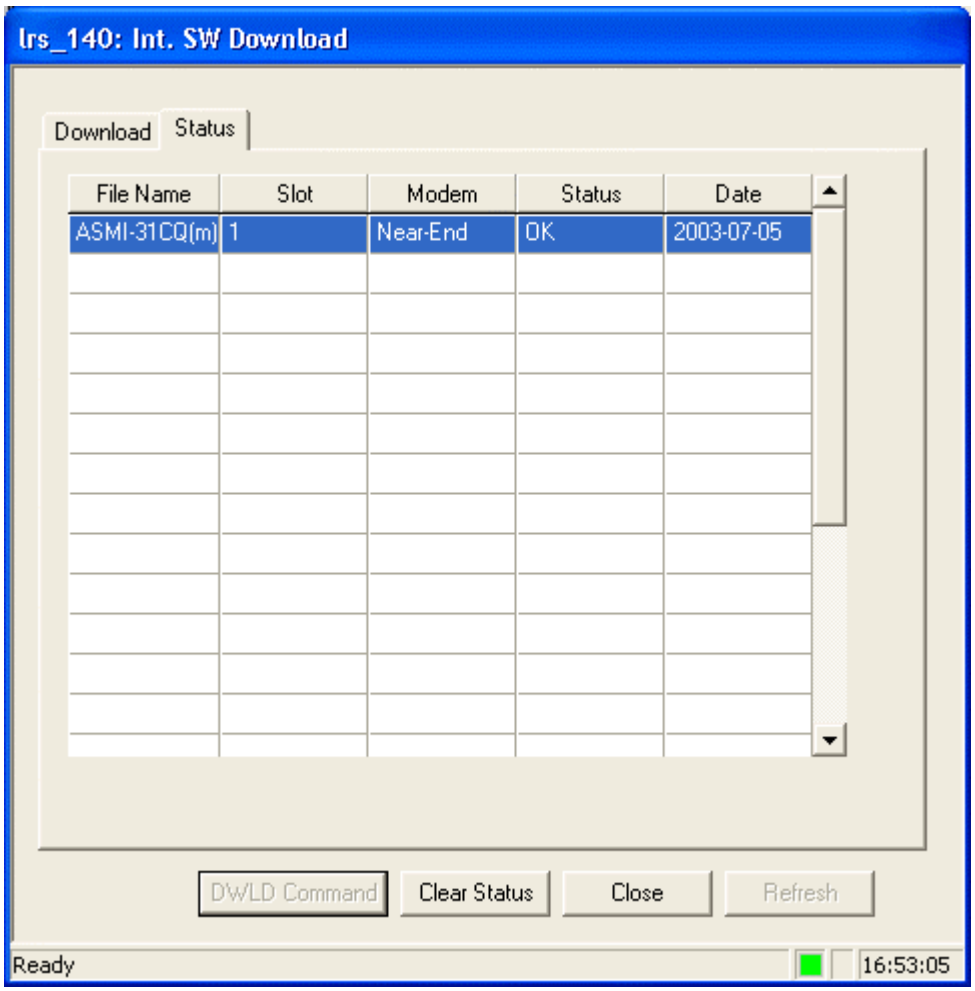


Figure A-3. LRS Modems SW Download Status Dialog Box

2. Click ‹**Close**› to close the dialog box.

Note *"In Process" status is not available for ASMi-31CQ.*

File Mismatch

If the file selected for download is not compatible with the selected slot, the Internal SW Download Slot File Mismatch notification appears. A pop-up Slot File Mismatch message box opens, indicating download failure. Click **OK** to close the message box.

A.2 External Software Download

Note

1. *This feature is enabled only for ASMi-51CD/CQ; ASMi-52 CD/CQ/CD4W (or an ASMi-31CQ, only for the FE, or ASMi-51SA Far-End).*
2. *Do not perform reset during Software Download.*

➤ **To download software from the TFTP server:**

1. Select an ASMi-51CD/CQ, ASMi-52/CD/CQ/CD4W card.

   A blue border outlines the selected card.

2. Right click and select **Options** › **SW. Download** › **Ext. SW. Download.**

   For ASMi52 family, the Far-End check box is disabled.

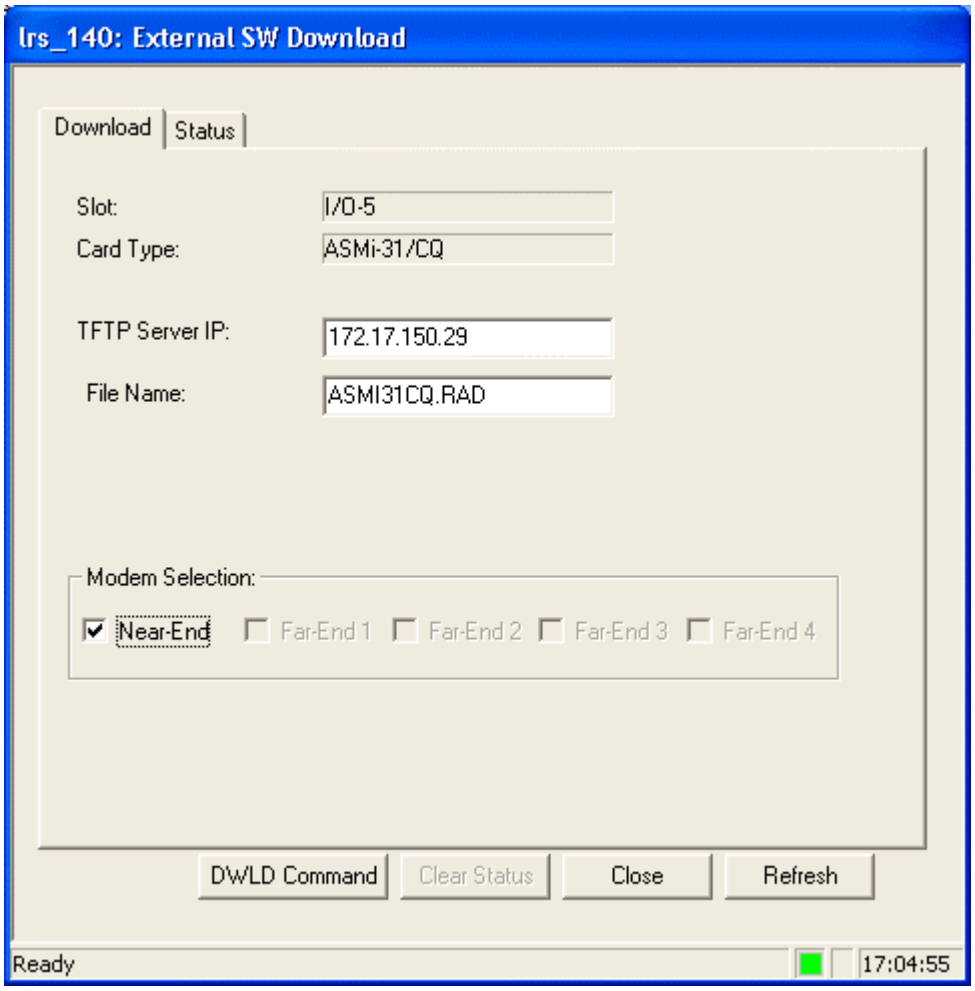


Figure A-4. LRS Modems SW Download Dialog Box

3. In the TFTP Server IP field, enter the **TFTP server IP address** and **File Name**.
4. In the File Name field, enter the **File Name**.
5. In the Modem Selection area, select the relevant check box for the **Near-end** modems or **Far-end** modems.
6. Click ‹**DWLD Command**›.

   A confirmation message appears "Transferring selected SW file. The current modem SW will be updated".

7. Click ‹**OK**› to begin download.

Checking the External Download Status

➤ **To check status of Ext. download process:**

1. In the **External SW. Download** dialog box, select the **Status** tab.

   The only statuses supported by ASMi-31 family are: Fail and OK.

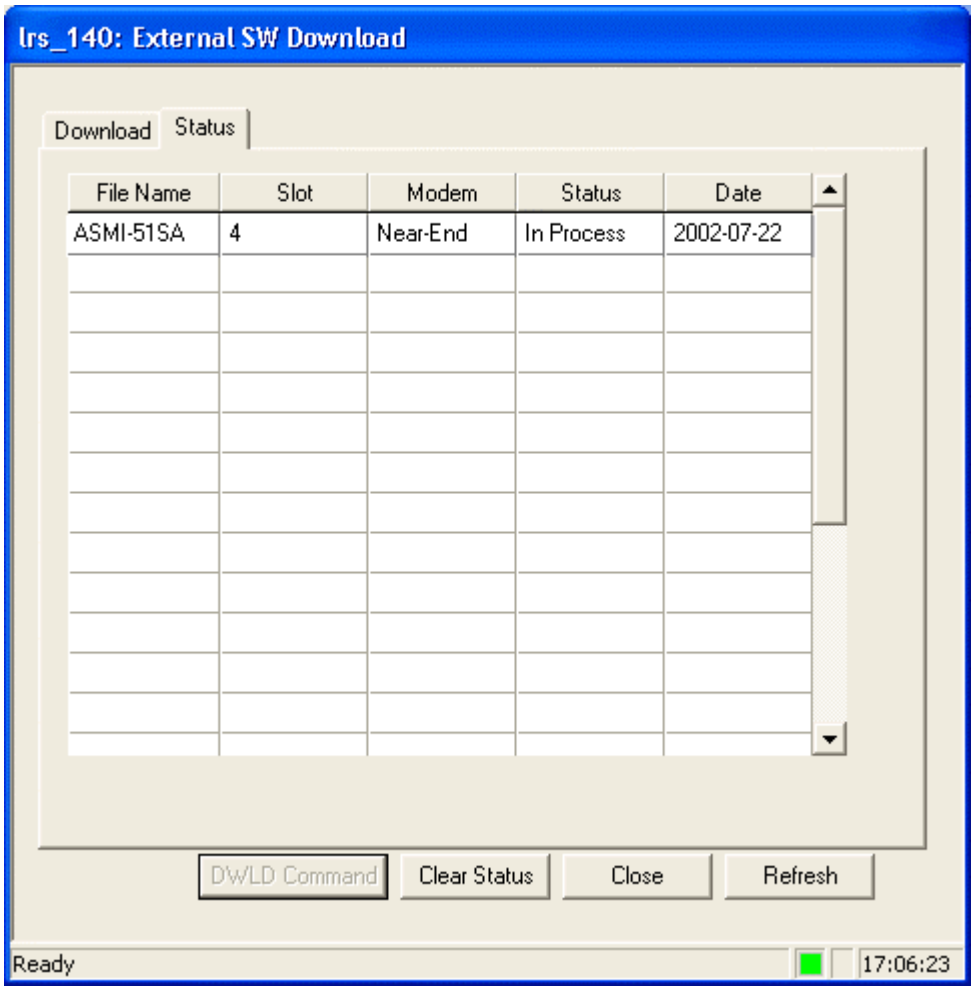


Figure A-5. External SW Download Status Dialog Box

2. Click ‹**Close**› to close the dialog box.

Appendix B

LED Indicators

This appendix provides lists and color and status descriptions of the LRS-24 card LED indicators. It also explains how to test the FOMi-E1/T1 cards.

This appendix describes the LED indicators of the following LRS-24 cards:

- PS/C
- CM-2/C
- ASMi-24C
- ASMi-31C
- ASMi-31CQ
- ASM-40CD
- ASMi-50C
- ASMi-50CD
- ASMi-51CD/CQ/CQ-E1
- ASMi-52CD (version ≥ 4.0)
- ASMi-52CQ (version ≥ 4.0)
- ASMi-52CD/4W (version ≥ 4.0)
- FOMi-40C
- FOMi-40CD
- FOMi-E1/T1C
- FOMi-E1/T1CD
- MTMi-20C.

B.1 LRS-24 LED Indicators

Each LRS-24 card has its own set of LED indicators. On CD-type cards, the LEDs representing Modem-1 are in the left column and Modem-2 in the right column. On CQ-type cards the LEDs representing Modem-1 and Modem-3 are in the left column with Modem-2 and Modem-4 in the right.

Each type of LED is treated differently by LRS-24. The following sections contain tables that summarize the color-coding of the individual LEDs for the LRS-24 cards.

Note *When configuring a card opposite card, the System Information Dialog Box sometimes displays incorrect values for the fields Far-End Hub ID and Far-End IP Address. This problem exists for the following modems: FOMi-E1/T1C, FOMi-E1/T1CD (modem #2), ASMi-24, ASMi-31, and ASMi-50CD (modem #2).*

PS/C Card LED Indicators

Table B-1. PS LEDs

Name	Color	LED On	LED Off
POWER	Green	When active	When not On
+5V	Changing	+5V	+5V OK - Green
–5V	Changing	–5V	–5V OK - Green
± 12V	Changing	± 12V	± 12V OK - Green

CM-2/C Card LED Indicators

Table B-2. CM-2 LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	–	–	Always
RD	Yellow	–	–	Always

ASMi-24C Card LED Indicators

Table B-3. ASMi-24C LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	–	Not blinking	Data passing through
RD	Yellow	–	Not blinking	Data passing through
RTS	Yellow	RTS status = On	–	–
DCD	Yellow	DCD status = On	–	–
TEST	Red	Test is running: local or remote modem	Not On	–
ERR	Red	Failure occurred: local or remote modem	–	Error detected while running a BERT test.

ASMi-31C Card LED Indicators

Table B-4. ASMi-31C LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	–	Not blinking	Data passing through
RD	Yellow	–	Not blinking	Data passing through
RTS	Yellow	RTS status = On	–	–
DCD	Yellow	DCD status = On	–	–
LINE LOS	Red	Loss of synchronization on line interface	–	–
TEST	Red	Test is running	Not On	–
ERR	Red	Failure occurred	–	–

ASMi-31CQ Card LED Indicators

Table B-5. ASMi-31CQ LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
DATA1 – *4*	Yellow	Data passing through	No data	–
TST1 – *4*	Red	Test is running on a modem	Not on	–
ALM1 – *4*	Red	Alarm is present	–	–
SYNC1 – *4*	Red Green	Red – Loss of sync on Line Interface Good synchronization on line interface		

ASMi-40CD Card LED Indicators

Table B-6. ASM-40CD LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	–	Not blinking	Data passing through
RD	Yellow	–	Not blinking	Data passing through
RTS	Yellow	RTS status = On	–	–
DCD	Yellow	DCD status = On	–	–
LINE LOS	Red	Loss of synchronization on line interface	–	–

Name	Color	LED On	LED Off	Blinking
TEST	Red	Test is running	Not On	–
ERR	Red	Failure occurred	–	–

ASMi-50C Card LED Indicators

Table B-7. ASMi-50C LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	–	Not blinking	Data passing through
RD	Yellow	–	Not blinking	Data passing through
RTS	Yellow	RTS status = **On**	–	–
DCD	Yellow	DCD status = **On**	–	–
LINE LOS	Red	Loss of synchronization on line interface	–	–
LINE QLTY	Green Red	Line quality = **Good** Line quality = **Bad**	–	Line quality = **Mid**
TEST	Red	Test is running	Not on	–
ERR	Red	Failure occurred	–	–

ASMi-50CD Card LED Indicators

Table B-8. ASMi-50CD LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD 1 – 2	Yellow	–	Not blinking	Data passing through
RD 1 – 2	Yellow	–	Not blinking	Data passing through
RTS 1 – 2	Yellow	RTS status = **On**	–	–
DCD 1 – 2	Yellow	DCD status = **On**	–	–
SYNC 1 – 2	Red Green	Loss of synchronization on line interface Good synchronization on line interface	–	–
TEST 1 – 2	Red	Test is running	Not On	–
ERR 1 – 2	Red	Failure occurred	–	–

ASMi-51CQ/CQ-E1 Card LED Indicators

Table B-9. ASMi-51CQ/CQ-E1 LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
DATA	Yellow	Data is not transmitted or received	No data is passing	Data is transmitted or received
TST	Red	Test mode is active in local or remote unit	Test mode is not on	Software download is in progress
ALM	Red	Alarm occurs, or an error is detected in BER testing	–	–
SYNC	Green Red	Green ON – Synchronization has been achieved between the two modems Red ON – Loss of synchronization has occurred between the two modems	The line is connected properly and the synchronization process is in progress.	

ASMi-52CQ Card LED Indicators

Table B-10. ASMi-52CQ LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
DATA * 4	Yellow	When data is passing	When there is no data	–
TST * 4	Red	When a rest is running on the modem	When not On	–
ALM * 4	Red			
SYNC * 4	Red / Green	When Loss of Sync occurs on Line interface		

ASMi-51CD/52CD Card LED Indicators

Table B-11. ASMi-51CD/52CD LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
DATA * 2	Yellow	When data is passing	When there is no data	–
TST * 2	Red	When a rest is running on the modem	When not On	–
ALM * 2	Red			
SYNC * 2	Red / Green	When Loss of Sync occurs on Line interface		

ASMi-52CD/4 Card LED Indicators

Table B-12. ASMi-52CD/4 LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
DATA * 2	Yellow	When data is passing	When there is no data	–
TST * 2	Red	When a rest is running on the modem	When not On	–
ALR * 2	Red			
SYNC A* 2	Red / Green	When Loss of Sync occurs on Line interface		
SYNC B* 2	Red / Green	When Loss of Sync occurs on Line interface		

ASMi-52 Standalone Unit LED Indicators

Table B-13. LRS-24 Front Panel LEDs

Name	Color	LED On	LED Off	Blinking
Front Panel				
PWR	green	Power is ON		
TST	red	A loopback test is active in a local or remote unit		
SYNC A	red/green	Red – Link A is not synchronized Green – Link A is synchronized		The line is connected properly and the synchronization process is taking place
SYNC B	red/green	Red – Link B is not synchronized Green – Link B is synchronized		The line is connected properly and the synchronization process is taking place
AIS	yellow	"All 1s string" is received at the E1 interface		
YELLOW	yellow	"All 1s string" is received at the T1 interface		
E1/T1 SYNC	red	Loss of E1 or T1 synchronization		
DATA	yellow			Data is being transferred

Name	Color	LED On	LED Off	Blinking
ALM	red	An alarm enters the buffer of local or remote unit		
ACT	yellow			For Ethernet, blinks according to the Ethernet traffic activity (10/100BaseT connector), available only when multiplexed
Rear Panel				
ACT	yellow			Blinks according to the Ethernet traffic activity (10/100BaseT connector)
LINK	green	Good link integrity (10/100BaseT connector)		

FOMi-40C Card LED Indicators

Table B-14. FOMi-40C LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	TD = **0**	TD = **1**	Data passing through
RD	Yellow	RD = **0**	RD = **1**	Data passing through
RTS	Yellow	RTS status = **On**	–	–
DCD	Yellow	DCD status = **On**	–	–
LINE LOS	Red	Loss of synchronization on line interface	–	–
TEST	Red	Test is running	When not On	–
ERR	Red	Failure occurred	–	

FOMi-40CD Card LED Indicators

Table B-15. FOMi-40CD LEDs

Name	Color	On	Off	Blinking
POWER	Green	Always	–	–
TD 1 – 2	Yellow	TD = **0**	TD = **1**	Data passing through
RD 1 – 2	Yellow	RD = **0**	RD = **1**	Data passing through
RTS 1 – 2	Yellow	RTS status = **On**	–	–
DCD 1 – 2	Yellow	DCD status = **On**	–	–
SYNC LOSS 1 – 2	Red	Loss of synchronization on line interface	–	–

Name	Color	On	Off	Blinking
TEST 1 – 2	Red	Test is running	When not On	–
ERR 1 – 2	Red	Failure occurred	–	In frequency hopping

FOMi-E1/T1C Card LED Indicators

Table B-16. FOMi-E1/T1C LEDs

Name	Color	LED On	LED Off
POWER	Green	Always	–
ELECTRICAL LOW	Red	–	See *Testing FOMi-E1/T1 Card Conditions*
ELECTRICAL AIS	Yellow	–	See *Testing FOMi-E1/T1 Card Conditions*
TEST	Red	Test is running	When not On
OPTICAL LOW	Red	–	See *Testing FOMi-E1/T1 Card Conditions*
OPTICAL AIS	Yellow	–	See *Testing FOMi-E1/T1 Card Conditions*
ERR	Red	Failure occurred	–

FOMi-E1/T1CD Card LED Indicators

Table B-17. FOMi-E1/T1/CD LEDs

Name	Color	LED On	LED Off
POWER	Green	Always	–
ELECTRICAL AIS 1 – 2	Yellow	–	See *Testing FOMi-E1/T1 Card Conditions*
ELECTRICAL LOS 1 – 2	Red	–	See *Testing FOMi-E1/T1 Card Conditions*
TEST 1 – 2	Red	Test is running	When not On
OPTICAL AIS 1 – 2	Yellow	–	See *Testing FOMi-E1/T1 Card Conditions*

Name	Color	LED On	LED Off
OPTICAL LOW 1 – 2	Red	–	See *Testing FOMi-E1/T1 Card Conditions*
ERR 1 - 2	Red	Failure occurred	–

Testing FOMi-E1/T1 Card Conditions

➤ **To light LEDs for tester use (*Figure B-1*):**

1. Set **AIS Enable** jumper to ON for the near-end master modem.
2. Disconnect the IN electrical wire in the far-end modem to turn on the LEDs:
   - ELECTRICAL LOW in far-end modem
   - OPTICAL AIS in near-end modem
3. Disconnect the IN Optic wire in the near-end master modem, starting with initial state (jumper ON).

   This will turn the OPTICAL LOW LED ON in the near-end modem.
4. Disconnect both electrical wires of the far-end modem, starting with initial state (jumper ON).
5. Connect a 'Loop' between the IN-OUT electrical entries of the near-end modem.

   This will turn ON the LEDs:
   - ELECTRICAL LOW in far-end modem
   - OPTICAL AIS and ELECTRICAL AIS in near-end modem.

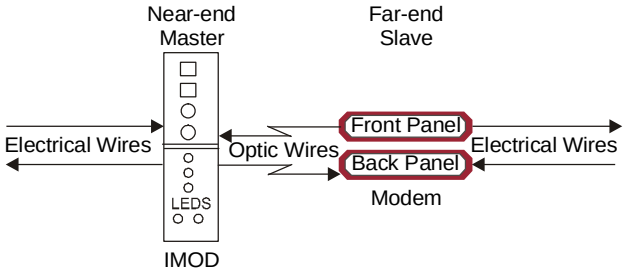


Figure B-1. FOMi-E1/T1 Connection

MTMi-20C Card LED Indicators

Table B-18. MTMi-20C LEDs

Name	Color	LED On	LED Off	Blinking
POWER	Green	Always	–	–
TD	Yellow	–	Not blinking	Data passing through
RD	Yellow	–	Not blinking	Data passing through
RTS	Yellow	RTS status = **On**		
DCD	Yellow	DCD status = **On**		

Name	Color	LED On	LED Off	Blinking
LINE LOS	Red	Loss of synchronization on line interface		
LINE QLTY	Green Red	Line quality = **Good** Line quality = **Bad**		Line quality = **Mid**
TEST	Red	Test is running: local or remote modem	When not On	–
ERR	Red	Failure occurred: local or remote modem		Error detected while running a BERT test

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